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ABSTRACT

Through this framework plan, the Soil Conservation Service (SCS) takes a look ahead to its soil and water conservation mission, a look at its direction and thrust in helping create a desirable America in the decades ahead. The plan attempts to define the nature of soil and water conservation efforts, to put them in perspective, and to present a systematic arrangement of SCS responsibilities. Utilizing a systems approach to long-range planning, the plan: (1) reflects the social and economic setting for soil and water conservation, (2) summarizes the Nation's needs for soil and water conservation, (3) outlines the basic objectives for a comprehensive conservation program, (4) shows how the objectives, benefits, effects, resource management systems, and program activities of SCS relate to one another, and (5) sets forth a hierarchy of goals, the future needs, and the institutional arrangements needed to attain the mission objectives and support the future direction of SCS. The framework for planning and programming, mission goals, and program activities for resource management systems are produced in chart form in the appendix. (BL)

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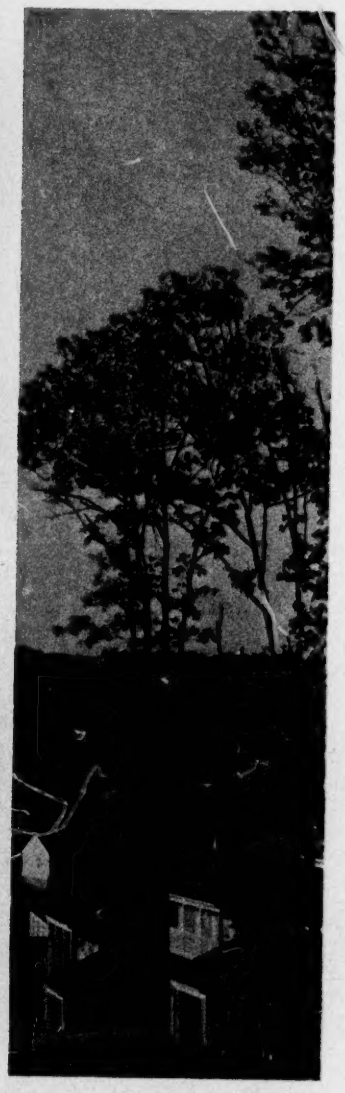
A framework plan --

Soil and Water Conservation for a Better America



U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

A Framework Plan--

SOIL AND WATER CONSERVATION FOR A BETTER AMERICA

U.S. Department of Agriculture

Soil Conservation Service

Foreword

THE MISSION OF THE SOIL CONSERVATION SERVICE IS TO ASSIST IN THE CONSERVATION, DEVELOPMENT, AND PRODUCTIVE USE OF THE NATION'S SOIL, WATER, AND RELATED RESOURCES SO THAT ALL AMERICANS MAY ENJOY:

-- Quality in the Natural Resource Base for Sustained Use.

-- Quality in the Environment to Provide Attractive, Convenient, and Satisfying Places to Live, Work, and Play.

-- Quality in the Standard of Living Based on Community Improvement and Adequate Income.

THIS FRAMEWORK PLAN IS DESIGNED TO GUIDE THE SOIL CONSERVATION SERVICE IN ITS MISSION IN THIS DECADE AND IN THOSE AHEAD.

Kenneth E. Grant

KENNETH E. GRANT
ADMINISTRATOR

Issued October 1971

Preface

July 4, 1976, marks the beginning of our third century as a Nation. Through this framework plan, Soil and Water Conservation for A Better America, we take a look ahead at our soil and water conservation mission--a look at its direction and thrust in helping create the kind of America we want in the decades ahead.

The plan attempts to define the nature of the soil and water conservation job, to put the job in perspective, and to present a systematic arrangement of the Soil Conservation Service job ahead.

The plan not only charts new courses for the Soil Conservation Service (SCS) but retains all the past and present SCS activities and relationships that continue to be meaningful in the 1970's.

This plan, using a systems approach to long-range planning within a framework of the entire mission of the Soil Conservation Service,

-- Reflects the social and economic setting for soil and water conservation.

-- Summarizes the Nation's needs for soil and water conservation.

-- Outlines the basic objectives for a comprehensive conservation program.

-- Shows how the objectives, benefits, effects, resource management systems, and program activities of SCS relate to one another.

-- Sets forth a hierarchy of goals, the future needs, and the institutional arrangements needed to attain the mission objectives and support the future direction of SCS.

SCS program activities for meeting the new challenges of our third century as a Nation are discussed in specific terms. The plan should be considered as an open-end plan with future revisions forthcoming as times and needs change.

No attempt is made to forecast the SCS program level at any specific time. Also, no attempt is made to determine precise costs of new programs. These will be handled through short-term programming and financial planning.

4

The plan gives recognition to conservation districts as institutions for effective leadership and for involvement of people in a broad program of resource conservation. It is designed to help SCS work with conservation districts, other organizations, other agencies, and people.

The plan points up important changes in direction and places emphasis on strengthening selected SCS activities, including

-- Developing an improved system that uses benchmark standards for quantity and quality for monitoring natural resource conditions and the environment.

-- Finding new approaches for treating difficult and persistent erosion and sediment problems.

-- Making pollution prevention and abatement an integral part of the conservation program.

-- Providing technical assistance in waste management.

-- Supporting programs that lead to a better distribution of the Nation's population.

-- Helping to develop a stream classification system and standards for stream management.

-- Assisting state and local governments with legislation, ordinances, regulations, and other planning criteria that lead to prudent land use and treatment.

-- Working more intensively with state and local governments on conservation plans, projects, and measures in rural and urban areas.

-- Helping to improve national and state land use policies.

-- Improving soil and water conservation technology by encouraging needed research and development.

-- Encouraging states to enact water use laws that lead to more efficient water use.

-- Encouraging preservation of areas with unique characteristics for agriculture, recreation, wildlife use, and historical sites.

-- Seeking new approaches to programs that lead to the development, improvement, and protection of privately owned wetlands and coastal marshes.

-- Helping communities develop and implement plans for the management and protection of lands subject to flooding.

-- Relating conservation programs to the needs of people for a better environment, community improvement, and economic opportunity.

-- Developing a system for rapid storage and retrieval of resource data.

It is evident that a dynamic soil and water conservation program will be required in future years for all people--rural and urban.

CONTENTS

	Page
Chapter I. Social setting	1
Environmental problems emerge	2
Basic social values shifting	2
Chapter II. Economic basis	4
More people expected	4
More workers forecast	4
More housing needed	4
More demands for recreation	4
More food and fiber grown on fewer acres	5
More demands on soil and water resources	5
More demands for water	6
Chapter III. Future needs	7
Land for recreation and wildlife	7
Much land needs treatment	7
Change in use	7
Problems require cooperative action	8
Erosion and sedimentation control	9
Water conservation and management	9
Flood-plain management	10
Increased efficiency in resource use	11
Environmental quality control	11
Chapter IV. The framework	13
Chapter V. The mission	16
Objectives	16
Benefits	17
Effects	18
Erosion control and sediment reduction	19
Pollution prevention and abatement (other than sediment)	20
Water storage	21
Water conservation	22
Ground-water recharge	23

Page

Drainage improvement 24
Fish and wildlife habitat improvement 25
Plant cover improvement 26
Flood reduction 27
Stream baseflow improvement 28
Compatible resource use patterns 28
Change in use 29
Resource management systems 30
Land management systems 31
Cropland 33
Pastureland 34
Rangeland 34
Woodland 35
Recreation and wildlife land 36
Urbanizing land 36
Environmental corridors 37
Transportation and transmission (T&T)corridors 38
Surface mine areas 38
Wetland management systems 39
Stream management systems 40
Water management systems..... 41
Ponds and lakes 41
Diffused surface water 42
Ground water 42
Estuaries and tidal shorelines 43
Fish farming 43
Waste management systems 44

Chapter VI. Thrust to the future 46

Resource technology development 46
Surveying and monitoring 48
Surveying--soil surveys 49
Surveying--natural resources 50
Monitoring--natural resources 50
Monitoring--sediment 51
Monitoring--snow and water supply 52
Resource conservation planning assistance 53
National and regional 55
State and area 56
Urban and suburban 57
Town and country 57
Group and individual 59
Installation and maintenance assistance 59
Installation 60
Maintenance 61

Page

Information support 62
Management support 63
International assistance 65

Chapter VII. Institutional arrangements for implementing the plan 66

Institutional factors 66
Institutional relationships 68
  Federal 68
  State 69
  Local 69
  Private 70
The framework plan 70

Exhibits 73

The framework 74
  In action 74
  For soil and water conservation 75
The hierarchy of goals 77
  Mission goals 77
  Thrust to the future goals 79

445-791 O - 71 - 2

CHAPTER I. SOCIAL SETTING

This framework plan for the Soil Conservation Service (SCS) is based on the premise that a cooperative federal - state - local program to encourage soil and water conservation is vital to the welfare of the people of the Nation. Soil and water are resources on which life depends. Managing them intelligently is more important today than at any time in history.

The social setting in which the work of soil and water conservation is carried on is much different today than it was 40 years ago. Although the basic mission of SCS is unchanged, there have been important changes in social values, priorities, responsibilities, available scientific knowledge, and institutional arrangements. As a result of these changes, American attitudes toward conservation and the environment have changed significantly. In the midthirties a primary concern among many conservationists and farmers was protecting the productive capacity of farmland. Topsoil was blowing and washing away. The productive soils of the country were being misused. The move to the suburbs and the resulting urban erosion and land use problems had only started. Thus, the need for soil and water conservation was seen as almost exclusively agricultural.

In the years following World War II, farmers produced more and more on fewer acres. With increasing surpluses, concern for farm problems, including soil erosion, diminished. Conservation remained a "good thing" but there was declining public concern. In scattered areas, erosion and sedimentation resulting from urban development were becoming serious problems. Other land use practices were creating community problems.

ENVIRONMENTAL PROBLEMS EMERGE

In the 1960's, attitudes toward conservation began to change. Gradually, people became aware that technological advances were having serious effects on the environment. The effects of pesticides as emphasized in the book "Silent Spring" by Rachel Carson, pollution of Lake Erie, smog in the cities, and oil slicks in the oceans became concerns. These concerns increased in number and in intensity in the latter part of the 1960's.

More closely related to the SCS mission are pollution from animal wastes, eutrophication of streams and lakes, destruction of fish and wildlife habitat, widespread sedimentation, and destructive land use practices. These mounting concerns have been reflected in new environmental legislation, new agencies, new expenditures, increased research, new books, and new organizations.

The environmental movement ranks in impact with two great conservation crusades of earlier years--the Roosevelt-Pinchot crusade early in the century, which led to the creation of national forests for conservation of forest reserves, and the Roosevelt-Bennett crusade, which led to the creation of the Soil Conservation Service in the early 1930's and to the passage of soil conservation district enabling legislation.

The new interest in conservation and the environment is more than a fad. A growing population, increasing affluence, and mounting concern for the quality of life in America, along with such critical social problems as racial tensions and poverty, are creating new values and a new set of priority goals.

BASIC SOCIAL VALUES SHIFTING

Changes in people's basic social values may be the most important element in forecasting the social and economic environment in which organizations and people will operate in the future. Predictions between now and 1980 indicate a trend toward

-- A growing concern for quality of life and human dignity in a technological world.

-- The formulation of explicit goals. Government will reflect this with more concern for the nature and order of national goals and priorities.

-- Change, flexibility, and innovation in resource management. Increasing affluence and technology will enlarge society's range of options.

-- More cooperative federal, state, and local government responsibility and action.

-- More emphasis on interdependence and cooperation in social and economic relationships.

-- A more leisure-oriented society.

-- More concern and action involvement by young people in resource management.

These predictions suggest that a different social atmosphere will prevail in the 1970's.

In this social and intellectual climate for conservation action and change, the Soil Conservation Service at the start of the 1970's is in a unique position. As a pioneer agency in the multidisciplinary approach to conservation and in working with land users, SCS can bring an ecological approach to today's complex problems in soil and water conservation. The skills and techniques developed by SCS for conservation on farm and ranch lands have proved equally adaptable to other land uses. Countrywide, it has been observed that

-- Soil surveys help communities identify areas on which residential, commercial, industrial, or recreation developments are practical and those areas on which they are not.

-- SCS planning techniques integrate physical, biological, and environmental considerations as they might affect social and economic goals.

-- Conservation techniques that control soil erosion on farmland can be applied successfully to erosion problems around towns and cities.

-- Watershed and resource conservation and development projects can do much to reduce floods, erosion, and sedimentation; provide municipal water supplies and recreation; and boost the economy of the area.

-- SCS expertise in building ponds and managing vegetation can be applied to the development of urban recreation sites.

-- SCS experience in land use selection and in soil and water management can help communities reduce their sewerage costs and property losses as well as other capital investment and maintenance costs.

-- SCS people are demonstrating their ability to provide leadership in the natural resource aspects of comprehensive planning.

The growing ability to assist people in areas of rapid land use change and new development has been a significant step for the Soil Conservation Service. SCS is now operating in an atmosphere of renewed public interest in conservation and the environment.

CHAPTER II. ECONOMIC BASIS

Economic forecasts in this plan are based on the best information available. They are starting points. A separate appendix contains detailed information and references on which these forecasts are based.

MORE PEOPLE EXPECTED

More than 200 million persons now live in the United States. By the year 2000, the population is expected to reach 300 million. But if the recent decline in birth rate continues, the population may increase to only 250 million. Most of this population increase is expected to occur in metropolitan areas.

MORE WORKERS FORECAST

If the population reaches 300 million by the year 2000, civilian employment is likely to increase from 72 million workers in 1965 to 125 million. Per capita income will increase nearly 190 percent by the year 2000. Leisure time will increase as annual hours on the job decrease from about 2,000 per worker in 1965 to about 1,800 in the year 2000. More leisure time will result in increased spending for such things as recreation, travel, and personal and family activities.

MORE HOUSING NEEDED

Congress restated the national housing goal in 1968 this way, "it could be substantially achieved within the next decade by the construction or rehabilitation of 26 million housing units, 6 million of these for low and moderate income families." Demand for housing will in turn create a demand for more effective land use planning. And it will create an increasing demand for lumber and other forest products.

MORE DEMANDS FOR RECREATION

Recreation demands will at least triple by the year 2000. Studies indicate that much of the land and water needed for outdoor recreation must come from privately owned land and related water resources in rural areas.

MORE FOOD AND FIBER GROWN ON FEWER ACRES

Farms and ranches will continue to increase in size and decrease in number. Total acreage in farms and ranches is expected to decrease from 1,123 million acres at present to 1,075 million acres by the year 2000. Farm employment will drop slightly as mechanization increases.

Land resources available for agricultural production are adequate for the foreseeable future but are subject to competing demands for other uses. By the end of the century, per acre cropland production is expected to increase by 70 percent. To get these production increases, greater capital expenditures by farmers will be required to keep pace with advances in agricultural technology. Also, soils used for cropland and grassland will have to be improved and maintained, and further shifts in land use may be needed to get more efficient production.

MORE DEMANDS ON SOIL AND WATER RESOURCES

Demands on soil and water resources will increase greatly in the future, even more than the predicted population increase would indicate. Although the population may well increase about 100 percent in the next 50 years, gross national product (GNP) projections indicate a 600- to 700-percent increase in the output of goods and services. This increase includes inputs that could deplete soil and water resources and degrade the environment. It also includes the increased cost of restoring or protecting the environment. In plans for economic growth, it will be necessary to equate economic benefits with effects on the environment.

By 1980, consumption of agricultural products is expected to be about 80 percent more than during the 1959-61 period. By the year 2000, another 35- to 40-percent increase is expected. Projected demands for industrial timber products and pulpwood in the year 2000 will be double those of 1962--an increase from 10,268 million cubic feet to 21,364 million. Currently, the Nation grows slightly more wood than it uses. Projections indicate, however, that before the end of the century the annual amount of wood grown will be less than the amount used.

The increasing population will require more land for urban uses as well as for roads and recreation areas. Estimates show that a million to a million and a half acres will move into special-use categories each year.

MORE DEMANDS FOR WATER

Increases in population and economic growth will cause an increasing demand on the water resources of the Nation. By the year 2000, water withdrawal is expected to increase by 200 percent. Consumptive use is expected to increase by 65 percent. These estimates assume an increased efficiency in water use. To satisfy this greater demand for water, increased reuse or recycling of water will be required. Water-quality problems will grow as reuse increases.

CHAPTER III. FUTURE NEEDS

The 1967 Conservation Needs Inventory (CNI) discloses that the Nation has enough land to meet current and future needs for farm, ranch, and forest production but that three-fifths of the land needs better care.

The CNI reveals that 811 million acres of land are suitable for cultivation. Of these, only about 415 million acres are used for cropland. This includes 50 million acres of class IV land that is marginal and has limitations for growing some crops. In addition to the 415 million acres of cropland, 23 million acres in classes V through VIII are used for crop production but are unsuited for this use. Although more land can be used for crops, if needed, land for certain specialty crops is in short supply.

LAND FOR RECREATION AND WILDLIFE

The 627 million acres of nonfederal rural land generally not suitable for cultivation is primarily in forest or grass land. Some of this land, particularly that in swamps and marshes, has a unique value for wildlife and fish. This, in addition to 368 million acres of potentially arable forest and grass land, provides about a billion acres of land with potential use for rural recreation and for rural living without seriously encroaching on essential food-producing acres. All properly managed land has esthetic value.

MUCH LAND NEEDS TREATMENT

Management on more than half of the 415 million acres of cropland is below standard for sustained cropland use. Thirty-six percent of this land, or 150 million acres, is losing excessive amounts of soil. Annual losses on 50 million acres are at least 10 tons per acre, which is two or more times greater than tolerable limits. The 23 million acres in classes V through VIII, now being used for crop production, should be changed to more suitable land uses. About two-thirds of all privately owned pasture, range, and forest land is inadequately treated for conservation of these resources.

CHANGE IN USE

People are continually changing land uses. Land is being converted from farming and other uses to suburban, residential, or commercial use. Construction creates new erosion and runoff problems on land that may have been adequately treated when used as farmland. Land is being purchased for speculative purposes or for weekend retreats and may get little or no care except around the homesite. When these changes are

445-791 O - 71 - 3

made, a different resource management system is needed. For example, land converted to forests may need a tree-planting program and careful management but on many farm and nonfarm areas this has not been done.

PROBLEMS REQUIRE COOPERATIVE ACTION

Because some of the most crucial soil and water conservation problems cannot be solved by individual landowners, cooperative action is necessary.

The Conservation Needs Inventory delineated and identified 19,195 watersheds, each covering less than 400 square miles. Of these, 8,904 have floodwater and sediment damage or water-management problems requiring project-type action for correction. As of January 1, 1971, application for assistance had been received for 2,914 such projects of which 1,030 had been approved for operations and 278 had been completed.

Estimates of land required for producing food and fiber in the decades ahead are based on a continuing high rate of adoption of technology and on prudent land use. SCS will have to develop new conservation methods to keep pace with changing farming techniques, larger machinery, and monoculture. Production costs for farmers and ranchers continue to rise. Consequently, they will be seeking more efficient measures to reduce costs, at the same time maintaining quality standards for resource use.

An expected 65- to 70-percent increase in livestock production by the year 2000 will require better conservation treatment of forage-producing and associated areas. This will include measures to control runoff, reduce sediment, and control pollution from animal wastes.

Increased production needs for pulp and timber require that more woodland be treated to meet quality standards. Informing woodland owners about the long-range benefits of maintaining good-quality woodland is necessary. Multiple-use benefits, including recreation and wildlife, should be stressed. Land used for woodland should produce benefits that are competitive with other land uses.

Soil conservation needs in urban and urbanizing areas are complex and not fully understood by developers, land use planning groups, and local decision makers. New construction may take place with little knowledge of the soil and its potential use. Some homes are built on soils that flood, crack, or slide downhill. Sites that require expensive foundations for buildings and roads are sometimes selected when equally acceptable sites better suited for foundations are available. Some units of government, planning groups, and developers are becoming aware of the importance of evaluating soil, water, and plant resources.

Of the acreage expected to shift to urban, transportation, and other special uses in the next 50 years, about 50 percent may be used for building sites; 47 percent for recreation areas, wildlife refuges, surface mine areas, reservoirs, and the like; and 3 percent for transportation facilities. Most sites will require conservation measures.

The question of which land should be converted to urban and other special uses is of vital importance. SCS can help by working with units of government and private organizations that make land use decisions. No longer can land use and treatment plans be made within farm boundaries alone or solely on the basis of net returns to the land user.

EROSION AND SEDIMENTATION CONTROL

Soil losses due to erosion remain a continuing problem. The 1967 CNI shows that 706 million acres of nonfederal rural land have an erosion hazard if the soil surface is exposed to runoff water or wind. The most widespread erosion problem is on 221 million acres used for cropland. Adapted conservation methods are often needed to minimize erosion as more acres of row crops and fewer acres of grasses and legumes are used in cropping systems. Also, 210 million acres of rangeland have a serious erosion problem. Soil loss from erosion is most extensive in the South and Midwest and in the Palouse area of the Pacific Northwest.

In addition to sediment from farm and ranch land, other critical sediment sources are construction sites, surface mine areas, secondary road systems, streambanks, and shorelines. The annual sediment yield from these areas may be as much as 200 tons an acre. About 425,000 miles of existing rural roads and 148,000 miles of streambanks need treatment to control erosion.

Offsite economic and environmental damages from erosion-produced sediment present a conservation problem. The distance from the source of sediment to the place of damage makes the job of sediment control difficult.

WATER CONSERVATION AND MANAGEMENT

Maintaining adequate water supplies is a problem for rural and urban areas, especially for chronic water-short areas of the West. Without an extensive transfer and distribution system, economic development in some water-short areas may be curtailed by the end of the century. Interbasin water transfers may continue to increase but these will raise difficult jurisdictional and environmental problems.

Future water conservation and management includes conserving existing supplies, developing more adequate supplies, increasing efficiency of use and reuse, maintaining water quality, and managing water for multiple use. Better soil-water-plant relationships will be required to meet projected crop yields. This can be done by improving management techniques for conserving soil moisture and by providing irrigation at the right time and in the right amounts.

About 70 percent of the precipitation is lost through evaporation and transpiration, mainly in producing food and fiber and in maintaining desirable landscape plants. In arid and semiarid regions, however, plants that get their water from subsurface sources (phreatophytes) use large quantities of water needed for other purposes.

Conserving adequate supplies of quality ground water remains a challenge. Use and control of ground water have differed greatly, and shortages are developing in many areas. The problem needs to be considered on a regional or area basis and state and interstate actions usually are required.

FLOOD-PLAIN MANAGEMENT

Widespread flood-plain management is needed if flood damage is to be reduced and the full economic benefits are to be achieved.

Sixty percent of the Nation's flood damage occurs in upstream areas. Watershed protection as well as flood-plain management are needed. Flood-plain management includes uses that do not increase the flood hazard such as areas for open space, recreation, wildlife habitat, extensive agricultural use, pastureland, and woodland. For more intensive uses, encroachment lines should be established and flood elevations observed.

Comprehensive plans for watershed protection and flood-plain management are needed in most watersheds to minimize damages. Land use ordinances, flood-hazard studies, flood insurance, flood proofing, flood-warning systems, and watershed protection are often needed for resource use and management in upstream areas.

INCREASED EFFICIENCY IN RESOURCE USE

An increasingly important problem is the rate at which natural resources are being used to support an increasing population and a rising standard of living. Resources must be used more efficiently and effectively to bring about a higher social and esthetic, as well as economic, standard of living. The goal is to get a high level of output per unit of resource used and at the same time make minimal adverse impact on the environment and on society.

ENVIRONMENTAL QUALITY CONTROL

All SCS conservation activities affect many areas of environmental concern. These areas include land use; soil, water, and air quality; waste disposal; esthetic benefits; and the use of pesticides. Present conservation activities relating to environmental quality improvement will change with new problems and new management techniques.

Resource management systems that reduce sediment loads, improve the application and efficient use of fertilizers and pesticides, control runoff from waste-disposal areas, and improve the flow characteristics of streams will make significant contributions to the improvement of water quality.

Control of wind erosion through proper plant cover, cultural practices, and windbreaks and through improved methods for applying agricultural chemicals will materially improve air quality.

Municipal waste loads will more than double by the year 2000. Areas suitable for solid-waste disposal must be identified, improved, and expanded. New methods for waste management on land and for reducing the total amount of waste must be devised. Recycling offers the most promising solution. Until essential recycling techniques are developed and perfected, sanitary landfills will largely replace burning or dumping in oceans and streams. Farm animals, which now produce more than 1.6 billion tons of waste a year, may increase in number by 65 to 70 percent by the year 2000. About 70 percent of animal waste is deposited directly on the land. Increased use of feedlots will concentrate waste-disposal problems.

Planners must give more consideration to the public interest in preserving unique natural, scenic, and historic areas. Many such areas are now privately owned and, in some cases, known only to a few. The task ahead includes identifying such areas so that they can be considered if land use changes are contemplated.

Future needs demand that far more attention be given to population density and to the capacity of each natural resource area to support a population that is consistent with an acceptable environmental quality. Environmental quality for resource areas is influenced strongly by intensity of use and the amount of conservation treatment that is applied to overcome resource limitations and hazards. Planners and decision makers must recognize this relationship.

CHAPTER IV. THE FRAMEWORK

A summary of the social setting, economic basis, and future needs for soil and water conservation is presented in the first three chapters for this plan; more detailed information is in a separate appendix. These chapters are the basis for determining the extent and nature of the future soil and water conservation job.

This chapter presents the framework of the long-range plan. The framework chart (page 75) is the basis for chapters V and VI. The chart graphically presents the key elements of this plan.

The framework chart helps put the soil and water conservation job in perspective; presents a systematic arrangement for accomplishing the soil and water conservation mission; and brings the systems relationships of conservation into focus. This chart can be used to fit goals and future needs to any area of the country.

The framework chart shows the sequence for long-range planning. It begins with objectives and ends with program costs. Long-range planning interrelates objectives, benefits, effects, resource management systems, program accomplishments, program activities, and program costs. The plan relates them to social, economic, and environmental concerns and to future needs for soil and water conservation.

The framework presents a general course for soil and water conservation in the decades ahead. The direction is through a hierarchy of goals (page 77) that are set forth for each intermediary step between objectives and program costs.

The following will help to clarify the key elements of the framework:

Objectives provide a focal point for the plan and represent SCS's ultimate goals. Objectives are presented in broad general terms and help relate the needs of society to the supply and condition of natural resources. The first step in planning is a careful appraisal of the social setting, economic basis, and future needs for soil and water conservation. This information together with legislative and other authorities are the basis for the objectives.

In the light of future needs, objectives provide a springboard for developing goals. Such goals reflect the scope and magnitude of the soil and water conservation mission. The goals show what is needed to maintain natural resources in quality condition for sustained use.

Benefits, stated in more specific terms, are values to society that result from using natural resources and maintaining them in accordance with quality standards. Benefits express the values or satisfactions that contribute to objectives and to the Nation's general health and welfare. General goals are given for the benefits listed in the framework chart.

Effects describe changes in the physical condition of natural resources as a result of the installation of resource management systems. They are stated in terms of major conservation needs such as erosion control, sediment reduction, and pollution abatement. Effects describe the magnitude of the conservation job. In the long-range plan, both preventive and corrective conservation measures are considered. Goals and future needs are stated in chapter V.

A Resource Management System is a combination of conservation measures and management to improve and maintain the resource. Such systems produce the effects and benefits. Goals and future needs for each major system provide the link between program accomplishments and effect and benefit goals and indicate inputs needed to achieve effect and benefit goals.

Change in Use indicates that changes in resource use are often needed to correct misuse of resources and to meet changing needs.

Program Accomplishments represent the products and services produced directly by program activities. Program accomplishments are the inputs that lead to changes or improvements in resource management systems. They are evaluated primarily in terms of their contribution to mission objectives.

Program Activities are subdivided in the long-range plan so that more specific goals and plans can be stated. These activities consist of resource technology and the development of possible approaches and solutions, surveying and monitoring of resource problems and potentials, and resource conservation planning that leads to decisions on priorities, goals, and actions to be taken. The activities culminate in the installation, operation, and maintenance of improved resource management systems. Information and management give support for carrying out these activities.

Program Costs are the inputs necessary to carry out program activities that help accomplish mission objectives. SCS program costs are funded as appropriations from the Congress. Only part of the costs are furnished by SCS. Citizens, private groups, state and local governments, and other federal agencies contribute.

In summary, the framework chart shows the long-range planning sequence, which begins with a statement of objectives. Benefit goals to achieve the objectives are next. These represent the values of the conservation effort to society. Benefits are realized through effects for which goals and future needs are established. Effects are the physical results of the changes in use and improvements in resource management systems. Goals and future needs supporting resource management systems are developed to bring about the effects. Changes and improvements in resource management systems result from program accomplishments, program activities, and program costs by all agencies and groups concerned with conservation. This approach results in a long-range plan in which the soil and water conservation mission is viewed as a whole rather than as a series of isolated subparts.

445-791 O - 71 - 4

CHAPTER V. THE MISSION

The Soil Conservation Service is concerned with man's environment and its complex interactions--between water and soil, between plants and soil and water, between people and machines and soil, between wildlife and plants and soil, between wildlife and people, between rural and urban people, between land owners and land users, between farmers and suburbanites, between units of government and people, and between people and their use of natural resources. This concern merits citizen support and involvement on the broadest possible scale.

The focus of SCS efforts is to:

— Protect and improve the Nation's soil and water resource base.

— Improve environmental quality, especially as it pertains to soil and water problems in town-and-country and urban-suburban environs.

— Support rural development that will result in increased job opportunities, better facilities, a more stable economy, an improved standard of living, and a better place in which to live.

— Consider the needs and purposes of all life forms.

OBJECTIVES

The mission of the Soil Conservation Service is to provide national leadership in the conservation, development, and productive use of the Nation's soil, water, and related resources so that all Americans may enjoy the benefits embraced in the three mutually supporting SCS objectives.

OBJECTIVE 1: Quality in the natural resource base for sustained use.

America's soil, water, and other natural resources should be conserved and improved to support the steadily increasing agricultural and industrial demands of an expanding population. At the same time, these resources need to be appraised and used properly so that enough acres of suitable land are allocated for highways, wetlands, wilderness areas, fish and wildlife habitat, recreation, natural coastal areas, urban areas, and other necessary uses.

OBJECTIVE 2: **Quality in the environment to provide attractive, convenient, and satisfying places to live, work, and play.**

Environmental quality is improved by reducing the amount of sediment going into lakes, reservoirs, and waterways; by flood prevention and flood-plain management; by eliminating air and water pollutants; by protecting fish and wildlife and improving their habitat; and by erosion control, beautification, and prudent land use in both urban and rural areas. Degrading environmental trends should be reversed. New methods of waste disposal such as recycling are urgently needed to improve environmental quality.

OBJECTIVE 3: **Quality in the standard of living based on community improvement and adequate income.**

More job opportunities, higher income, and better community facilities improve the quality of living in rural areas, which will help bring about better distribution of the Nation's population. Many people live in cities for economic reasons only. They would much prefer to live in small towns or rural areas if employment, income, and cultural opportunities did not lag so far behind those in cities. Resource conservation and development helps boost rural economy, thus providing jobs, better income, needed community facilities, and other amenities for a good life.

BENEFITS

Benefits represent benchmarks for quantity and quality. They are values that accrue to society from having natural resources used and maintained according to quality standards for sustained use. Benefit goals provide a yardstick to gage these values.

GOAL: **Adequate amounts of land, water, and related resources arranged, used, and maintained according to quality standards for the benefit of all people.**

The framework chart (page 75) lists individual benefits that support objectives.

GOALS for benefits are:

Adequate amounts of quality cropland.

Adequate amounts of quality pastureland.

Adequate amounts of quality rangeland.

Adequate amounts of quality woodland.

Adequate amounts of clean water to meet multiple-use needs.

Adequate outdoor recreation opportunities within easy reach of all people.

Adequate amounts of quality fish and wildlife habitat with special regard for rare and endangered species.

Pleasing urban and rural landscapes.

Air free of dust, unpleasant odors, smoke, and other pollutants.

Society's needs for goods and services are met.

Resources used efficiently through prudent selection of investment and production alternatives including selection of suitable land, effective use of water, and application of conservation technology.

Jobs in town and country at equitable pay rates.

Adequate public and private facilities including transportation, utilities, schools, libraries, and hospitals.

EFFECTS

Effects are the physical results of resource management systems. They may be beneficial or detrimental. For example, stored water may increase stream temperature, thereby reducing the population of desired game fish, or a wildlife marsh may attract mosquitoes. Positive effects bring about the benefits. They are intermediate outputs.

Effects are commonly classified as either onsite or offsite. Onsite effects, such as reduced erosion, occur on the site and the primary benefits accrue to the land owner or user. Offsite effects occur on lands removed from the site. Changes in amount of sediment delivery or of streamflow, for example, may benefit or damage the physical resources downstream from the site of a resource management system.

Multiple effects are common. A single dam may reduce erosion, sedimentation, and flood flows and store water for beneficial use. Effects may extend far beyond the particular site. That is, people downstream may have a clearer stream and less flood damage.

Goals for effects and the future needs supporting them are based on social, economic, and environmental demands and on the present condition of soil, water, and related resources.

GOAL: Desired physical changes resulting from managing soil, water, and related resources according to quality standards.

Erosion Control and Sediment Reduction

GOAL: Soil erosion and sediment delivery reduced to an acceptable level.

THE PRESENT:

Soil erosion and sediment damage continue to be major conservation problems. About 4 billion tons of soil are eroded and redeposited by moving water each year. About a quarter of this is deposited annually in estuaries and in the sea.

More than 300 million acres of farm and ranch land are seriously eroding. Erosion along 425,000 miles of rural roads and highways increases maintenance costs, creates safety hazards, and reduces scenic values. Excessive erosion occurs on 148,000 miles of streambanks. Erosion is often severe on construction sites. Wind erosion damages from 700,000 to 2.7 million acres each year in the Great Plains and is a serious problem in other parts of the Nation. Not only does wind erosion damage bare fields but the windblown soil also damages growing crops and creates maintenance and removal costs if deposited in irrigation ditches, road rights-of-way, or around buildings. The blowing soil often makes driving hazardous and is always a nuisance.

Sediment contributes heavily to pollution of streams. Sediment damages crops; reduces the capacity of streams and reservoirs; clogs drainage and irrigation ditches; and reduces fish and wildlife, scenic, and recreation values.

FUTURE NEEDS:

-- Continued emphasis on updated and effective national and state policies on erosion control and sediment reduction.

-- Improved methods of working on problems of erosion and sedimentation, particularly in urban and suburban areas.

-- A massive, countrywide, sediment-control effort, taking into consideration onsite and offsite effects.

-- New approaches and institutional arrangements for dealing with difficult erosion and sedimentation problems, particularly in urban and suburban areas.

-- Updated information on the incidence and severity of erosion and sedimentation.

-- Research on pollution aspects of erosion and sedimentation.

-- Use of effective erosion- and sediment-control measures at all construction sites.

Pollution Prevention and Abatement (other than sediment)

GOAL: Soil, water, and air pollution reduced to an acceptable level.

THE PRESENT:

As our economy expands and production and services increase, waste materials are being produced in increasing quantities and concentrations. Waste disposal is a monumental cost in our technologically oriented society.

As a result of livestock production trends, concentration of animal wastes in small areas is increasing. This, along with the expansion of urban development into agricultural areas, intensifies health and pollution problems. Animal wastes may pollute surface waters through runoff and ground water through leaching. Runoff frequently carries animal wastes to streams, which may become sources of contamination to downstream water users.

Wastes from processing agricultural products cause major problems in air and water pollution and in solid-waste management. The pollution potential from these wastes, expressed as biochemical oxygen demand (BOD), is equivalent to that produced by a population of more than 168 million people.

Plant nutrients, particularly phosphorus and nitrogen, are pollutants if they occur in excessive amounts. They can move into streams, lakes, and reservoirs from fields, barnyards, feedlots, sewage, and industrial wastes. Nitrate nitrogen can move into ground water.

Inorganic salts and minerals occur in all streams. Increased concentrations result from some agricultural practices, particularly irrigation in arid regions. High salt concentrations in irrigation water damage growing crops and may result in severe long-term damage to irrigated soils. Very high concentrations make the water unsuited for most beneficial uses.

The problem of pollution by chemical pesticides has grown. Water carries pesticides with soil particles, sometimes for long distances.

Many recreation waters and human water supplies are becoming increasingly contaminated because of improperly located, designed, and operated septic systems and sanitary landfills. They are often located near lakes and streams in rural communities. Inadequate systems may contribute pollutants to both surface and ground waters.

Management, control, and disposal of wastes are often closely associated with soil and water use and with the resource management systems for the area.

FUTURE NEEDS:

-- Legislative authorities that include water-quality management and pollution-abatement measures.

-- Institutional and organizational arrangements at the state and local level to consider pollution abatement.

-- Pollution prevention and abatement made an integral part of conservation programs.

-- Basic facts on pollution problems that relate to soil resources and farm activities and to processing plants.

-- Research on pollution problems that relate to animal wastes, excessive use of fertilizers, and agricultural chemicals.

-- Technical information on using various kinds of soil and plants for waste recycling and disposal and applicable standards and specifications for pollution abatement.

Water Storage

GOAL: **Adequate water-storage capacity for flood prevention and streamflow regulation and to meet the needs for water supply, for fish and wildlife, and for recreation.**

THE PRESENT:

Precipitation and runoff seldom occur at such times and in such amounts to meet the water needs of people. Too much rainfall and runoff create devastating floods; too little results in drought and water shortages. Storage of runoff helps to meet water needs, reduces flood discharges to channel capacities, and fills lakes for recreation uses.

FUTURE NEEDS:

-- Determination of water-storage needs as a part of each alternative plan for water and related land resource development.

-- The identification and preservation of potential reservoir sites, particularly in upstream areas, to meet anticipated needs.

-- Inclusion of adequate water-storage facilities in watersheds to meet current and projected needs.

-- Utilization of each damsite according to its potential for meeting foreseeable needs.

Water Conservation

GOAL: **An adequate supply of good quality water; maximum efficiency in water use.**

THE PRESENT:

Farming uses more water than any other enterprise. Precipitation supplies most of the water required for farming. Yet, precipitation is often supplemented by water from streams, surface impoundments, and underground aquifers. Because of inefficient distribution systems and poor application methods, only about half of the irrigation water applied is used by crops. In addition, about 20 percent of all withdrawals are lost in conveyance.

Soil moisture that is withdrawn and transpired by plants is also a factor in water conservation. Many weeds compete with economic plants. In water-short areas, this competition may adversely affect the cost and production of economic plants.

The low cost of water to users has resulted in a general disregard for improved efficiency in water use. Management to maintain or improve quality of water while using it is implicit in water conservation. Efficient use of water is meeting needs with a minimum reduction of quantity and quality.

Water rights influence the efficiency of water conveyance, application, and use. As water needs increase, water laws will be even more important in preserving water quality and quantity.

FUTURE NEEDS:

-- Plant manipulation methods that improve efficiency of soil moisture use while meeting the quality standards of resource management systems.

-- Equitable and flexible water laws that improve water quality and efficient use.

-- Water management practices that minimize losses and keep waste discharges at acceptable levels.

-- Up-to-date information on irrigation water losses during conveyance and application.

-- Up-to-date information on water-holding capacity of soils and consumptive use by plants.

-- Improved water forecasts for regulation of reservoirs, short-term crop planning, and other uses.

-- Cropping plans that are compatible with available water supply.

-- An equitable water-pricing mechanism that maximizes output per unit of water input.

Ground-Water Recharge

GOAL: An ample supply of good quality ground water.

445-791 O - 71 - 5

THE PRESENT:

Ground water now supplies about 20 percent of the water used in the United States. This is expected to increase to 33 percent or more within the next 20 to 50 years as the demand for water increases. Artificial replenishment of ground-water is being considered, especially in those areas of critical shortages. Almost all ground-water recharge, natural or induced, takes place in areas that can be affected by conservation programs. Many recharge areas are being destroyed by urban and other forms of intensive development.

FUTURE NEEDS:

-- Comprehensive evaluations of the effects of conservation and watershed protection programs on ground-water supplies and water quality.

-- Soil survey interpretations and geologic data useful in identifying and evaluating ground-water recharge areas.

-- Information on the effects of ground-water withdrawals and induced recharge on streamflow and the flooding or drying up of wetlands.

-- Better technology and programs to prevent salt-water contamination by either encroachment or injection.

-- An inventory of existing and potential recharge areas.

-- Protection of recharge areas from sources of pollution.

-- Zoning or other land use ordinances to protect ground-water recharge areas from uses that destroy their recharge capacity.

Drainage Improvement

GOAL: **Drainage improved on land if it is in the public interest; preservation of wetlands that have value for wildlife.**

THE PRESENT:

More than 130 million acres of cropland and pastureland have a wetness problem. Some of this land has been treated and needs only maintenance. Much of it needs drainage improvement. Many fertile soils with poor drainage are being used for cropland. Drainage improvement is also important on some forest, recreation, residential, commercial, and community services land. The wildlife, recreation, scenic, and other environmental values of wetlands need to be preserved.

FUTURE NEEDS:

-- Continued emphasis on updated national and state drainage policies.

-- Improved methods for evaluating public benefits and allocating drainage costs.

-- Updated information on the extent and effectiveness of drainage improvements on land in all uses.

-- Drainage systems that meet quality standards for the planned use.

Fish and Wildlife Habitat Improvement

GOAL: **Improved and protected fish and wildlife habitat.**

THE PRESENT:

Most of the Nation's wildlife crop is produced and harvested on land used for cultivated crops, livestock grazing, or wood production. How these farm and ranch lands are used and treated determines the kind and abundance of wildlife. Management of these lands also affects the condition of streams, ponds, and lakes and their suitability as fish habitat.

Some farming practices such as drainage and clearing, monoculture, and elimination of fences and hedgerows have modified or impaired habitat for some species. At the same time, soil and water conservation measures continue to be the principal means of creating and preserving wildlife habitat.

FUTURE NEEDS:

-- Consideration of wildlife as one of the conservation and production goals of all resource management systems.

-- A better understanding and appreciation of the economic and esthetic values of fish and wildlife and of the need to preserve these values.

-- Improved incentive programs for farmers and ranchers to preserve and improve wildlife habitat.

-- More extensive use of wildlife management practices in conservation farming and ranching.

-- Introduction and management of desirable species of fish and wildlife to habitats that have been modified by land use or other environmental changes.

-- More information on cost returns, operational procedures, and institutional arrangements for providing hunting, fishing, and other outdoor activities.

Plant Cover Improvement

GOAL: **Adequate amounts and varieties of suitable plant materials to meet needs for protecting the soil.**

THE PRESENT:

There is need for broader understanding of the importance of plant cover for protecting soil and water resources and reducing erosion; for improving the appearance of landscapes; for serving as a buffer and filter against pollution; for producing food, fiber, and shelter for animals and people; and for insuring good quality water. Critical sediment-producing areas may indicate that broad areas are misused, mismanaged, or simply ignored.

FUTURE NEEDS:

-- Broader understanding, appreciation, and use of plants for improving and maintaining resource management systems to meet quality standards.

-- Technical guidelines for monitoring and protecting natural areas set aside for research, for education, and for protection of endangered plants or animals.

-- A greater variety of plant materials for erosion control, pollution abatement, beautification, wildlife habitat, livestock forage, and other uses.

Flood Reduction

GOAL: Minimum flood damage in upstream watersheds.

THE PRESENT:

In 1966, it was estimated that about 60 percent of the Nation's flood damages occur in upstream watersheds. These damages amount to $1 billion annually and are projected to $2 billion by the year 2000 if no further projects or flood management plans are carried out. By 1970, watershed projects had prevented damages totaling $180 million. By planning and regulating the use of flood plains, the extent of future development can be controlled and flood damages minimized. Land treatment measures, structural control measures, flood proofing, and flood warnings are the best ways of controlling flood damages to existing developments on flood plains.

FUTURE NEEDS:

— An accelerated and comprehensive effort to reduce flood problems in upstream areas.

— Areas subject to flooding identified and basic facts assembled on the incidence, severity, and frequency of floods in upstream areas.

-- Information on the effects of upstream flood-control measures on downstream areas.

— Continued emphasis on comprehensive plans for conserving and developing water and related land resources in an entire stream basin, including accelerated planning and installation of flood-control measures in upstream areas.

-- Assistance to local agencies in predicting flood damage that may occur to urban and industrial developments and in planning flood-plain management.

445-791 O - 71 - 6

Stream Baseflow Improvement

GOAL: Stream baseflow improved for multiple-use needs.

THE PRESENT:

Many streams, particularly in small watersheds, periodically have flows that are inadequate to maintain a desirable stream environment. Water quality and stream fishing cannot be maintained without an adequate baseflow. Recreation use, wildlife habitat, livestock use, and irrigation by stream diversion are affected if baseflows are inadequate. Land use, plant cover, and conservation treatments affect stream baseflow.

FUTURE NEEDS:

-- Watershed evaluations to determine the potential for upstream improvement if baseflow is inadequate.

-- Stream withdrawals that are compatible with minimum desirable baseflows.

-- Land use, treatment, and management plans that emphasize water infiltration.

-- Water storage, ground-water recharge, and release plans that help maintain adequate baseflows.

Compatible Resource Use Patterns

GOAL: Compatible patterns of resource use that support natural resource and environmental objectives.

THE PRESENT:

Leapfrog and linear development and random and uncoordinated location of transportation and transmission corridors are examples of present patterns of resource use that are in conflict. A compatible pattern of uses is as important to a geographic area as is the suitability of soil for different uses.

FUTURE NEEDS:

-- Decisions based on a fuller understanding of the interrelationships of resource management systems.

-- Development and use of quality standards that result in compatible patterns of resource use.

-- Consideration of the principles of landscape architecture in planning the improvement and maintenance of soil, water, and related resources for any geographic area.

-- Development and use of techniques for monitoring and evaluating impacts on environmental quality resulting from changes and improvements in patterns of resource use.

CHANGE IN USE

To meet the objectives, many changes in resource use will be required. Changes are needed in land and water use to improve the quality of the resource base, the environment, and the standard of living. Some changes in use will result from resource development to meet future needs but other changes will be needed to correct misuse of resources.

Well-planned land and water use is a key to good resource management. Prudent use can prevent resource and environmental quality problems, reduce the costs of resource management, and increase the value of soil, water, and related resources.

Each land area has a potential for some use. Because it is used less intensively than its capability or limitations permit does not mean that its use should be changed. It is still being used within its potential. What is important, however, is the protection of resources for sustained use regardless of the intensity of current use.

GOAL: **Changes in land and water use to meet development needs and correct misuse so that compatible and mutually supporting patterns of use result.**

FUTURE NEEDS:

-- National and state land and water policies that establish broad standards for resource use, including:

. Soil and water conservation that will protect resources from excessive erosion, siltation, flooding, pollution, and similar damage.

- Use capacity of different resource areas to produce desired goods and services without crowding or environmental degradation.

- Sanitation, including waste disposal, pollution abatement, and control of disease.

- Security and safety, providing protection from floods, fires, and earth slides.

- Preservation of recreation, fish and wildlife, esthetic, and scenic values.

- Control of noise through compatible land use patterns and vegetative barriers.

- Preservation of sites that have unique values for farming, recreation, natural beauty, and other special uses such as historic sites.

-- Participation of public and private concerns in refining national and state resource use policies and standards.

-- Development of planning criteria and ordinances to implement sound land and water use according to quality standards.

RESOURCE MANAGEMENT SYSTEMS

The Soil Conservation Service has always recognized that interactions between resource management systems are inherent in the proper use and treatment of land and water resources. Technical guides designate suitable alternative uses for each kind of soil and the combinations of conservation measures needed to meet quality standards for each use. The need for combinations of conservation measures is given particular emphasis. River basin and small watershed project planning further emphasizes the systems approach. This planning is founded on the interdependency of land and water resources and on the interdependency of measures for conservation and development.

SCS experience has proved that the systems approach in soil and water conservation work has value. Current concerns with the environment and an increasing understanding of cause-effect interactions in resource use and alternatives bring the systems idea into perspective. In this long-range plan, the Soil Conservation Service gives formal recognition to resource management systems.

In a broad sense, the changes, improvements, and maintenance of resources that take place in any geographic area are viewed as components of a resource management system for that area. The area may be the Nation, a region, a river basin, a watershed, a town-and-country area, an urban-suburban area, or a farm. In developing a resource management system for a geographic area, the focus is on changes and improvements that meet the objectives of the people concerned.

A resource management system may consist of several resource management subsystems. This pertains to larger areas or to areas that have different land uses. For example, a resource management system for a watershed may include subsystems for managing land, wetland, streams, water, and waste. In turn, the subsystem for land management may include subsystems for managing cropland, woodland, rangeland, pastureland, and the like.

In this long-range plan, both systems and subsystems are referred to as systems.

GOAL: Resource management systems that meet quality standards and that are compatible and mutually supporting in meeting natural resource, environmental, and living standard objectives.

Land Management Systems

Land management systems are designated by their primary use. They are divided into cropland, pastureland, rangeland, woodland, recreation and wildlife land, urbanizing land, environmental corridors, transportation and transmission (T&T) corridors, and surface mine areas.

Land management systems should interact with and complement each other. It is this interaction between systems that provides alternatives and flexibility in planning the use, treatment, and management of all the systems within a given area. For example, a ranch might include a rangeland management system for livestock and wild animals, a cropland system for production of feed crops for winter, a pastureland system for early spring forage production, and a wetland system for migratory waterfowl. All these systems interact in providing a yearlong feed and forage supply for the ranch enterprise and in protecting basic resources. It would be shortsighted to plan a management system for one kind of land without considering its relationship to the objectives of all systems involved.

Whether planning is regional or at the town-and-country level, a desirable harmony of uses is as much a requirement for a good resource management system as are the soil suitability and treatment requirements. The mixing of heavy industry and commercial areas with residential areas or a livestock concentration with an urban-suburban area are examples of conflicting land use. Planned compatible-use areas with well protected natural resources are ingredients of long-range social, economic, and conservation objectives for any area.

The demand for open space to serve as environmental corridors is accelerating. It is expected that as the Nation's population increases, the demand for open space will increase geometrically and not in a direct ratio to population growth. Because of the growing demand for open space, attractive sites should be preserved for the use of all people.

People first demand open space on their own premises or in their neighborhoods. Local units of government with the cooperation of planning commissions and developers must equate people's demand for open space and their need for esthetic values with the economic opportunities of a resource area.

Environmental corridors often include water courses and their accompanying flood plains and escarpments. In addition, wooded sites, rock outcrops, water impoundments, wildlife habitat, transportation and transmission corridors, and the like may be included in well-planned environmental corridors.

Soil interpretations have been prepared for all land uses. Their acceptance as a basis for land planning is widely recognized by planners and persons working in the field of natural resources.

In most instances, a single land use change or system improvement leads to a number of conservation effects and benefits. For example, changing the use of steep land from row crops to well-managed pastureland or woodland reduces erosion and sedimentation, slows surface runoff, reduces flooding, and increases stream baseflow. In terms of benefits, the results may include improved water quality, beautification, reduction in the cost of sediment control, and increased net returns to the farmer and his community. Adding contour stripcropping to a cropland management system gives similar benefits and, in addition, adds to cropland and wildlife habitat quality and to recreation opportunities.

In developing goals and policies for land management systems, multiple effects and benefits are important. In developing standards, the effects related to water conservation, sediment reduction, wildlife habitat improvement, pollution abatement, and improvement in patterns of resource use, as well as the traditional standards for erosion control, must be considered.

GOAL: A harmony of land uses maintained at quality standards to serve adequately the needs of all.

Goals for the different land management systems and the future needs supporting these goals follow:

Cropland

GOAL: Cropland managed at quality standards to meet requirements for food and fiber, for soil and water conservation, and for other multiple-use needs.

FUTURE NEEDS:

-- *Broadened quality standards for cropland that include effects on* environmental quality.

-- Cropland managed for sustained use according to updated quality standards.

-- Reduction of cropland acreage with severe limitations for crop production.

-- High quality cropland soils retained for cropland use, especially those in short supply for specialty crops.

-- Better soil interpretations for specialty crops.

-- Stabilization of erosion- and sediment-producing areas.

-- Conservation practices adapted to changes in farming such as new tillage practices, recycling waste materials, and use of pesticides.

-- Legislation to help reach the goals for better cropland management.

Pastureland

GOAL: **Pastureland managed according to quality standards for sustained use to provide an adequate supply of good forage and to meet the needs for watershed protection and wildlife management.**

FUTURE NEEDS:

-- Quality standards for pastureland that include consideration of the effects on environmental quality.

-- Pasture management guidelines compatible with quality standards and current cost-return data.

-- Determination of kind, quality, and quantity of organic waste that can be recycled on pastureland without damaging the soil, forage, grazing animals, or water and air quality.

-- Broader understanding that well-managed pastures are basic to an effective conservation program on many livestock farms and ranches.

Rangeland

GOAL: **Rangeland managed according to quality standards to meet needs for livestock production, watershed protection, and wildlife management.**

FUTURE NEEDS:

-- Restoration, improvement, and use of rangeland according to updated quality standards.

-- A method for evaluating soil losses on rangeland.

-- Improved range site and condition inventories and their interpretations for livestock production, wildlife management, and other uses.

-- Further development and use of rangeland cost-return data.

-- Improved methods of managing range ecosystems with more consideration to environmental aspects.

Woodland

GOAL: Woodland managed according to quality standards to meet requirements for producing woodland products, for watershed protection, and for recreation.

FUTURE NEEDS:

-- Further development of soil-forest site information, including the classification of all soils according to the nationally prescribed method of soil grouping for woodland use.

-- Current woodland cost-return data based on soil-forest site information and forest research.

-- More and better woodland management systems that are an integral part of the management plan for the entire operating unit and that are closely coordinated with national and state forestry agencies.

-- Development of information on the limitations of soil-forest sites for recycling organic wastes.

-- Improved institutional and organizational arrangements to deal effectively with the problems limiting woodland management.

-- More emphasis on the role of conservation districts in improving and expanding their services and facilities to help the landowner with woodland management.

-- Utilization of privately owned woodland for recreation and wildlife developments, including income-producing enterprises.

-- An intensive effort on the part of the United States Department of Agriculture, state forestry agencies, conservation districts, and allied forestry associations to improve forestry practices on privately owned woodland according to updated quality standards and to meet projected forest product needs of the Nation.

-- Clarification of responsibilities for furthering the planning and application of woodland conservation.

Recreation and Wildlife Land

GOAL: Recreation and wildlife land managed according to quality standards to meet national needs.

FUTURE NEEDS:

-- Preservation of more areas having unique attributes for recreation and wildlife, particularly in areas of high or increasing population density.

-- Greater use of basic soil and water information in selecting and developing recreation and wildlife areas.

-- Development of more privately owned recreation areas with particular emphasis on income-producing enterprises.

-- An updated inventory of existing and potential recreation areas.

-- Better cost-return information on recreation uses of soil and water resources, including projected demands, enterprise management, visitor requirements and preferences, economic impacts, and effects on environmental quality.

-- Greater recognition of values of and provision for recreation, wildlife, and open space on all land regardless of primary use.

Urbanizing Land

GOAL: Urban and urbanizing land developed according to quality standards to provide a satisfying environment in which to live, work, and play.

FUTURE NEEDS:

-- Urban land use planning in harmony with the soil and other natural resources.

-- Resource monitoring systems that include land in transition from rural to urban and suburban uses.

-- Improved information on soil, water, plant, and related resources that is useful to planners, developers, sanitarians, and others who make resource-use decisions for urbanizing land.

-- Improved soil and water conservation techniques for urbanizing land.

-- More recognition by local governments and land developers of critical erosion, sedimentation, and water-disposal problems and of soil and water needs.

-- State and local plans that include quality standards for soil and water conservation and for the orderly development of rural areas for housing, industry, transport, and related developments.

-- Assistance to state and local governments in preparing and carrying out laws and ordinances for land use zoning, erosion and sediment control, and similar measures that result in an effective soil and water conservation program.

-- Soil, water, and related resource data and interpretations useful in selecting sites for parks, greenbelts, and community developments.

-- Information for predicting the kinds of problems that can be expected and the resource maintenance needed with respect to homes, public and commercial buildings, industrial developments, parking lots, shopping centers, and underground conduits and pipelines and in planning water storage, flood prevention, flood control, and other related water developments.

-- More urban people informed on the need for water conservation and resource planning and on sources of help.

Environmental Corridors

GOAL: **Identification, development, and management of environmental corridors according to quality standards to serve the needs of people for open space.**

FUTURE NEEDS:

-- Guidelines for determining principal and conditional uses of environmental corridors based on soil, water, and related resources.

-- Guidelines for selecting, using, and managing environmental corridors and assistance to communities in applying them.

-- Inventories of special water, woodland, wildlife habitat, plant community, and mineral sites that would add materially to an environmental corridor.

-- Model laws and ordinances for guiding local units of government in regulating the preservation of land for environmental corridors.

-- Community zoning, as appropriate, of selected land areas for environmental corridors.

Transportation and Transmission (T&T) Corridors

GOAL: T&T corridors located and managed according to quality standards to provide maximum safety and natural beauty and for compatible multiple uses.

FUTURE NEEDS:

-- State and local guidelines for selecting T&T corridors, including airports, in accordance with quality standards.

-- Updated technical guides that include conservation technology for T&T corridors.

-- Resource management of T&T corridors according to quality standards.

-- Roads on private land located and stabilized in accordance with quality standards.

-- Monitoring resource conditions on T&T corridors.

-- National, state, and local recognition of the multiple uses of T&T corridors.

Surface Mine Areas

GOAL: Surface mine areas stabilized according to quality standards to control erosion and prevent pollution; managed so that they can return to other productive uses.

FUTURE NEEDS:

-- Legislative authority for programs to accelerate technical and financial assistance for reclaiming and using surface mined areas.

-- State laws and regulations requiring reclamation of surface mined areas or deep mine culm (refuse coal) piles in accordance with quality standards.

-- Improved technology for reclaiming surface mine areas.

-- Implementation of mining and reclamation plans by mine operators and land owners according to quality standards to provide for water management, reduction of toxic effluents, and sediment control; for keeping soil materials for best later use; and for stabilization, beautification, and productive use after mining is completed.

Wetland Management Systems

Wetlands are flat or low lands covered with shallow and, sometimes, intermittent waters. They may be called marshes, swamps, bogs, wet meadows, potholes, sloughs, and river overflow land. Shallow lakes and ponds, usually with emergent vegetation as a conspicuous feature, are included but permanent streams, reservoirs, and deep lakes are not. The associated moist-soil vegetation is a critical element.

It is possible to drain or fill wetlands to create land for agricultural, industrial, or residential expansion. But the food and cover plants required by wetland wildlife will no longer grow in abundance. As habitat disappears, the birds and other animals that depend on it also disappear. Although we usually think of the values of wetlands as entirely biological in nature, we should not overlook their esthetic and psychological values.

The preservation of wetlands must be a cooperative endeavor that involves state, federal, and local agencies; private organizations; and citizens. The success of these efforts determines the ultimate survival of many waterfowl and other wetland wildlife species and their contribution to outdoor recreation. Wetland management systems must be oriented to quality standards that preserve the unique effects and values of wetlands.

GOAL: Wetlands managed according to quality standards to meet esthetic, environmental, and recreation needs.

FUTURE NEEDS:

-- Recognition of the importance of wetlands to the welfare and existence of certain kinds of wildlife and of the economic, esthetic, scientific, and other public and private values of wetlands.

-- Preservation of wetlands that are important to rare or endangered wildlife species or that are productive for other desirable wildlife species.

-- Management of wetlands by landowners in accordance with multipurpose objectives and quality standards.

-- Restoration to natural wetland condition of drained land with low agricultural value.

Stream Management Systems

A stream is any waterway that carries natural runoff either continuously or intermittently. A stream system is the network of waterways that delivers streamflow to any given point. Stream management must include consideration of the related resources in the watershed.

To develop a management program for stream systems, the effects of alternative actions must be determined. There is such a close relationship between soil and water and land and streams that no part can be considered separately. The entire stream system and its relationship to other resource systems in the watershed must be considered before any part of it can be significantly modified.

Special-purpose districts frequently have authority for managing stream systems. These include flood-control districts, drainage districts, conservancy districts, water authorities, soil and water conservation districts, water management districts, and watershed districts. In some areas, authorities of special-purpose districts overlap. Many special-purpose districts do not provide for comprehensive management of the total stream system. If there is no such provision, stream systems are developed and modified by state and local governments and by land owners and developers within existing water rights and resource regulations.

GOAL: Stream systems managed according to quality standards for such multiple uses as water supply, recreation, esthetic needs, and fish and wildlife habitat.

FUTURE NEEDS:

-- Appropriate organizational and institutional arrangements for protecting, developing, and maintaining stream systems.

-- A stream classification system that includes physical, economic, and environmental criteria for potential economic development and for recreation, fish and wildlife, and similar values.

-- Standards for stream management systems that are set forth as multiple conservation effects and benefits.

-- Comprehensive plans for improving stream management systems that recognize water quality and other standards for stream management.

-- Periodic monitoring of sediment loads in selected streams to identify significant damage to economic and esthetic values and to obtain sedimentation profiles for determining sediment types, sources, movement, and associated pollutants.

Water Management Systems

Water management systems are associated with ponds and lakes, diffused surface water, ground water, estuaries and tidal shorelines, and fish farming. These water areas have management problems and social and economic values in addition to those related to streams and wetlands.

GOAL: Management of water resources according to quality standards to provide adequate water for individual, municipal, commercial, industrial, and agricultural uses; for recreation; and to serve esthetic and environmental needs.

Ponds and Lakes

GOAL: Ponds and lakes developed and managed according to quality standards to provide adequate water for consumption, recreation, and fish and wildlife.

FUTURE NEEDS:

-- Identify potential impoundment sites, preserve significant sites for future development, and develop sites according to their potential for meeting foreseeable needs.

-- A better public understanding of the process of eutrophication.

-- Multiple use of ponds and lakes consistent with quality standards for sustained use.

-- Related land use and management that reduces delivery of sediment and other pollutants.

-- Compatible patterns of resource use that recognize the potential use, value, and environmental significance of clean and attractive ponds and lakes.

Diffused Surface Water

GOAL: Diffused surface water managed according to quality standards for such uses as agriculture, recreation, and wildlife.

FUTURE NEEDS:

-- Appraisal of the magnitude of diffused surface water resources (water that does not contribute directly to streamflow).

-- Techniques for better utilizing diffused surface water for agriculture, wildlife management, and recreation.

-- Resource management that reduces pollutants transported to diffused surface water collection areas.

Ground Water

GOAL: Ground water managed according to quality standards for sustained use.

FUTURE NEEDS:

-- Inventory of ground-water areas, including total stored volume, quality, rate of recharge, and safe rate of withdrawal.

-- Better state and local regulations for development, use, and management of ground water.

-- Water resource planning that fully coordinates uses of ground-water and surface-water resources.

-- Improved methods for keeping low quality water out of ground-water supplies.

Estuaries and Tidal Shorelines

GOAL: Estuaries and tidal shorelines managed according to quality standards to minimize shoreline erosion and offshore siltation and for fish and wildlife habitat, for recreation, and for beauty.

FUTURE NEEDS:

-- Greater recognition of estuaries as an important natural resource and a better understanding of the ecological interactions of estuarine plants and animals and the factors affecting the quality of the resource.

-- A resource management system for estuaries and tidal shorelines that preserves or restores their unique values in accordance with quality standards.

-- Land use and treatment measures that control sediment and other pollutants in the drainage areas of estuaries.

-- Use of vegetative and engineering techniques to develop better methods for stabilizing beaches and shorelines.

Fish Farming

GOAL: Development and management of fish farming enterprises according to quality standards for commercial production of fish and other aquatic species.

FUTURE NEEDS:

-- Commercial enterprises designed to produce fish and other aquatic species in accordance with quality standards that include site selection, biology, water quality, and pollution control.

-- Fish production techniques that include efficient methods of harvesting, processing, and marketing.

Waste Management Systems

Waste management systems provide for the utilization, recycling, or disposal of wastes with minimum contamination to soil, air, and water. Systems are needed for managing solid wastes (refuse and junk), sewage, animal wastes, and agricultural and industrial processing wastes.

Each of America's more than 200 million people throw away about a ton of solid waste each year. This goes into disposal areas but about 90 percent of them do not meet public health standards.

Solid wastes can be buried in sanitary landfills, giving protection to the environment. The first step in locating a landfill site is to determine its soil limitations. The Soil Conservation Service has provided soil survey information to communities for years to help them in locating landfill sites.

Municipalities across the Nation are pouring more than 5,000 billion gallons of sewage through sewerage systems each year. Although much of it receives primary and secondary treatment, the need for tertiary treatment to remove nutrients, inorganic salts, and minerals is becoming increasingly apparent. These components are contributing significantly to the accelerated eutrophication of streams and lakes. The safe disposal of more than 1.6 billion tons of animal waste is a monumental challenge. Moreover, the amount of agricultural and industrial processing wastes exceeds the amount of sewage produced by the total population each year.

Treatment of wastes may differ but present technology indicates that the soil and plant cover of rural land can receive treated waste without causing environmental degradation. The organic and inorganic waste components are stabilized on or in the soil and utilized in plant growth if applied at reasonable rates. Because not all soils are suitable for waste recycling, soil survey information is extremely important in selecting and managing such areas.

Techniques applicable to irrigation are required in the recycling of treated waste to the land. In addition, erosion control practices and adapted plant covers must be used to minimize sediment losses. Land used for waste management can be attractive and productive. Screening such land with plants may add to the attractiveness of the landscape as well as provide food and cover for wildlife. In future planning, waste-disposal sites, if managed according to quality standards, may also be considered for a wide range of uses.

GOAL: **Waste management systems located and managed to meet quality standards.**

FUTURE NEEDS:

-- Interpretations of soil, land use, and plant suitability needed for managing the disposal of wastes.

-- Technical guidelines for the design and operation of waste management systems.

-- Waste management systems in rural areas that are developed in accordance with quality standards.

-- Assistance that helps land users plan for waste management as an integral part of a conservation plan.

-- State and local laws and regulations that provide for the appropriate use of soil and water conservation technology in waste-disposal areas.

-- Updated conservation district programs that recognize waste management needs and establish goals for meeting the needs.

-- Close working relationships between local, state, and federal agencies that have responsibilities in waste management with particular emphasis on effective disposal system designs as they relate to soil and water resources.

CHAPTER VI. THRUST TO THE FUTURE

The preceding chapter sets forth SCS mission objectives--quality in the natural resource base for sustained use, quality in the environment, and quality in the standard of living. These objectives indicate the scope of SCS work in the years ahead and SCS responsibility for relating resources to the needs of the people. Goals and future needs for attaining the objectives were stated in the preceding chapter. This chapter outlines major SCS activities supporting the objectives.

Although the framework chart categorizes the work of SCS as program accomplishments, program activities, and program costs, emphasis is given in this chapter to program activities. Activities influence both accomplishments and costs. Once activities are selected, certain accomplishments may be expected and certain costs are required.

Activities of the Soil Conservation Service are oriented to its role of national leadership in soil and water conservation and to the accomplishment of the mission objectives. Major SCS activities supporting the objectives are arranged according to their sequence of contribution to conservation, as follows: Resource technology development, surveying and monitoring, resource conservation planning assistance, installation and maintenance assistance, information support, management support, and international assistance.

In this chapter, each major program activity is described, goals are stated, and present and future policies and plans that SCS will emphasize are given.

GOAL: Program activities that help people improve and maintain resource management systems to meet quality standards for sustained use and support natural resource, environmental, and living standard objectives.

RESOURCE TECHNOLOGY DEVELOPMENT

Resource technology development is adapting scientific knowledge and research to the technology requirements of the SCS mission. It includes expanding knowledge and understanding that lead to new approaches and better techniques for improving the use and management of natural resources.

New technology development includes a wide range of activities, beginning with basic research and continuing through field testing of new techniques, materials, and conservation measures and evaluation of resource management systems as they relate to quality standards and effectiveness.

In developing resource technology, SCS works with research agencies in interpreting and applying research results for developing and modifying quality standards and in carrying out field investigations and studies to adapt research and other information to specific field conditions.

The Soil Conservation Service has made a steady transition over the years that has taken into account the broadened scope of the soil and water conservation mission. In this transition, SCS has developed techniques and expertise in collecting data and in evaluating, planning, designing, and improving resource management systems of ever-broadening scope and complexity. Changing living patterns; more and larger equipment; and new plants, fertilizers, pesticides, and herbicides require updating and improving conservation technology. The greater use of soils for waste disposal and the effectiveness of many waste management systems depend on improved soil, water, and plant technology.

Conservation approaches and emphasis change with new values, new techniques, and technological improvements. SCS responsibilities and the impact of the conservation program on environmental values have many facets. There is much to be learned and much to be done in further improving technical knowledge and in orienting SCS activities to priorities and challenges relating to natural resources and the quality of the environment.

GOAL: **Broadened resource technology that meets challenges posed by the intensified use of soil, water, and related resources and by the impact of technology on environmental quality.**

THE SOIL CONSERVATION SERVICE WILL:

-- Develop resource technology adequate to meet the broadened planning responsibilities of the Soil Conservation Service.

-- Strengthen liaison with research and educational institutions and with industry.

-- Contract with institutions for research and development information critically needed for the conservation program.

-- Develop and strengthen methods for assembling, evaluating, and incorporating available soil, water, and plant data into SCS technology.

-- Learn more about pollutants and their control and about effective, efficient means of waste management.

-- Accelerate environmental quality training programs for present and prospective SCS employees including the use of colleges and universities to meet SCS technology needs.

-- Determine and improve the capabilities and values of remote sensors to operations.

-- Expand field trials to facilitate the adaptability of research results to different conditions.

-- Adjust the plant materials program to meet broadening environmental objectives.

-- Adjust staffing to provide a broader array of disciplines to work with environmental problems and new planning responsibilities.

-- Improve the methodology for evaluating the effects and benefits of conservation activities.

SURVEYING AND MONITORING

Surveying is the identification, classification, and delineation of resources and their properties, such as kinds of soil, landscape features, and site evaluation for specific uses. Monitoring is the periodic evaluation and recording of the extent and condition of resources in specific areas to determine changes or trends that may be taking place. Surveying and monitoring activities consist of gathering, analyzing, and disseminating information about soil, water, plant, and related resources. Use of this information commonly goes far beyond the purpose for which it was gathered.

Earth-orbiting spacecraft and high-altitude aircraft flights offer new and powerful tools for getting many types of data. Infrared and other special types of photography at high altitudes offer potentials for speeding up and improving soil surveys and for monitoring other natural resources.

GOAL: Surveying and monitoring activities that provide resource information needed for carrying out research, for establishing resource use policies for planning resource management systems, and for informing the public.

Surveying--Soil Surveys

Soil Surveys include identification, classification, correlation, and interpretation of soils according to national standards. A uniform system of classification is followed so that all soils that are alike are named and classified the same. Information obtained for one kind of soil at one location can be projected to all other locations in which the same kind of soil occurs. In planning efficient use of soil resources, the location and extent of different kinds of soil and their behavior when used in different ways are necessary. Soil surveys provide information about land resources that can serve as a basis for planning the improvement and maintenance of resource management systems.

The Soil Conservation Service has federal leadership for conducting the National Cooperative Soil Survey. Soil maps, descriptions, and interpretations are made available in interim and final published form. Soil survey information is updated as new data become available.

GOAL: A soil survey of the Nation that is complete and current.

THE SOIL CONSERVATION SERVICE WILL:

-- Distribute soil survey data and interpretations to public users within 1 year of field map completion.

-- Give high priority to completing detailed soil surveys in areas of high-intensity use, rapid land use change, and critical sediment sources.

-- Develop a priority for updating soil surveys in areas needing different kinds and intensities of surveys.

-- Conduct research and field evaluations to improve soil survey interpretations and classification.

-- Use remote sensing equipment to make soil maps and interpretations.

-- Use modern automatic data processing (ADP) methods for storing, processing, and retrieving soil data and interpretations and for further development of the advanced mapping system.

-- Encourage local, state, and federal agencies to increase their contributions to the National Cooperative Soil Survey.

-- Expedite the collection and correlation of soil-range, soil-woodland, and other soil-site data.

Surveying--Natural Resources

Natural resource surveys consist of systematic studies of specific areas for alternative uses. These surveys may include soil, engineering, geologic, water, plant, and related resource information. The surveys help land users make sound resource-use decisions.

The final assembly of maps and data for easy use and reference by local decision makers is done area by area. Priorities for selecting areas depend on the nature, complexity, and severity of the area condition and on the ability of the local people to use the data and to share in the cost of preparation.

GOAL: Basic resource data and interpretations for units of government, planners, and others concerned with resource management.

THE SOIL CONSERVATION SERVICE WILL:

-- Inform the public of the value and use of natural resource data and interpretations in making prudent land use and management decisions.

-- Develop and assemble survey data and help decision makers use them.

-- Encourage units of government and others to share costs for natural resource surveys.

-- Develop guides for planners, developers, and local officials for using natural resource surveys.

Monitoring--Natural Resources

There is a continuing need for information on the extent and condition of the Nation's natural resources. Local, state, and federal governments need it for program planning and for assigning priorities. Industry needs it for product planning and for locating plants. Citizens need it to understand their environment and make choices among conflicting demands.

The present CNI provides some of the desired information. This inventory will be expanded to include all areas--urban, rural, public, and private. It will be needed as a base for monitoring resource conditions. Standards will be needed for monitoring resources. Ratings that indicate departure from a recognized standard will be used to describe the adequacy of resource management systems.

GOAL: A system for monitoring the condition of the Nation's natural resources.

THE SOIL CONSERVATION SERVICE WILL:

-- Devise methods for monitoring resource conditions.

-- Cooperate with resource, educational, and research organizations in developing the monitoring system.

-- Develop an efficient method for collecting, storing, and retrieving data that is compatible with methods used by other resource agencies.

-- Update and publish periodically the results of monitoring resource conditions.

-- Develop and publish special resource-condition reports as needed.

-- Maintain the capability for monitoring natural disasters, special and hazardous conditions, and radiological contamination.

-- Assist other agencies in implementing a system for monitoring rare and endangered species of plants and animals.

Monitoring--Sediment

Local, state, and federal governments need information on the rate, amount, and characteristics of sediment yields for efficient water-resource development and use and for sound watershed treatment. It is important in predicting the influence of various land uses and treatments on sediment yields and sediment delivery to streams, estuaries, lakes, and reservoirs. Sediment-yield data are needed for evaluating land treatment and structural measures and for improving structural designs.

GOAL: A sediment monitoring system that includes information such as sediment sources, deposition, characteristics, and effects.

THE SOIL CONSERVATION SERVICE WILL:

-- Cooperate with other agencies and institutions in developing and improving sediment monitoring, methodology, data assimilation, and equipment.

-- Make a nationwide survey to determine sediment yield and characteristics and influencing factors.

-- Update the national sediment survey periodically.

-- Report and interpret the data in each survey and carry on long-range studies of the cumulative data to correlate yield rates, sediment density, density changes, or other usable parameters with physiographic or land resource areas, geologic land forms, land uses, or other correlative boundaries.

-- Study the effects of sediment on water-quality reduction, eutrophication of lakes and reservoirs, and the impairment of stream channels.

-- Cooperate with municipalities and other local agencies who are owners of established reservoirs in conducting sediment surveys under cost-sharing and work-sharing arrangements if the surveys usefully augment other SCS surveys and serve a public need.

Monitoring--Snow and Water Supply

It is estimated that 70 percent of the runoff in western rivers and streams comes from melting snow. Efficient planning and use of water for agriculture are essential. The efficient operation of storage facilities is based on such knowledge of the water resource as amount of runoff, coverage, melt rates, daily and seasonal changes in hydrologic factors, and stream hydrographs. Collection and analysis of hydrologic data are important for computing water resources for Western States, for providing basic hydrologic data, for forecasting floodflows, and for other purposes.

Better snow-hydrology studies are needed in the northern Great Plains, in the Great Lakes States, and in the Northeast where spring floods develop from winter snowpack and water supply is influenced by snowmelt. With proper use of snow surveys and snow hydrology, floods can be forecast and appropriate flood-warning and flood-proofing actions taken.

GOAL: **Timely and accurate snow-survey data for water-resource control and management, for flood-warning purposes, and for better understanding of the generation of floodflows from snowmelt.**

THE SOIL CONSERVATION SERVICE WILL:

-- Complete the installation of an automated snow-survey monitoring system and its related hydrologic-data-collection network and analysis system.

-- Establish cost-sharing arrangements with other agencies and institutions for installing and operating the system.

-- Cooperate with other agencies and institutions in developing methodology, data processing, programming, and equipment.

-- Consider the need for extending the snow-survey monitoring system to other areas and encourage appropriate coverage where data are needed for runoff predictions, resource-condition inventories, reservoir regulation, and flood warning.

RESOURCE CONSERVATION PLANNING ASSISTANCE

In resource conservation planning, resource users are assisted in reaching decisions on objectives, priorities, alternatives, and actions. This planning makes use of surveying and monitoring information and relates it to conservation technology. It includes data collection and interpretation. It considers pertinent factors that affect resource use and attempts to harmonize conservation planning with general and operational planning. Emphasis is placed on furnishing planning groups and decision makers with alternatives for resource use and management.

SCS recognizes its responsibility for bridging a wide gap between national concerns and those of groups and individuals in the use of soil and water resources. Meeting this responsibility means preventing or solving numerous soil and water conservation problems through many public and private organizations and individuals.

GOAL: Planning assistance to decision makers and citizens so that they can foresee, identify, and evaluate soil and water problems and can pursue action programs that overcome the problems and promote orderly growth and quality living through resource management.

THE SOIL CONSERVATION SERVICE WILL:

-- Provide resource planning assistance that gets citizen participation and support on the broadest practical scale.

-- Help planners and decision makers recognize that each essential factor in planning interacts with all other essential factors and that, by using this principle, better planning decisions result.

-- Alert decision makers to the need for flexibility in land, water, and related resource planning; to the need for providing suitable land for unforeseen uses; and, from different alternatives, help citizens and decision makers arrive at sound decisions.

-- Emphasize planning procedures that insure that regional, state, area, community, and individual unit plans complement and remain compatible with each other.

-- Help national, state, and local units of government develop regulations and ordinances for soil, water, and related natural resource use based on quality standards.

-- Provide planning assistance to units of government to help them meet standards that balance quality with quantity.

-- Provide timely and effective planning assistance to decision makers so that they can make sound land use decisions and avoid misuse of natural resources and degradation of the environment.

National and Regional

National and regional resource planning provides the framework for planning at state and local levels. It lays out guidelines for encouraging the prudent use and conservation of soil, water, and related resources. It takes into account the integral aspects of national and regional growth, population dispersal, living standards, and environmental quality as well as national and regional opportunities and particular needs.

There is a trend toward multistate planning regions. These regions are points of focus for comprehensive planning involving interstate cooperation. Functional regional planning will continue with such multistate authorities as economic development regions and river basin commissions.

GOAL: National and regional plans that include prudent use and conservation of soil, water, and related resources.

THE SOIL CONSERVATION SERVICE WILL:

-- Participate within the executive branch of government in developing policies and plans for achieving national soil and water conservation objectives.

-- Give priority to regional planning that facilitates state and local resource planning objectives.

-- Organize resource data collection to facilitate regional resource planning.

-- Organize staffing to facilitate soil and water conservation assistance to regional planning bodies.

-- Provide leadership for the agricultural, rural, and upstream watershed aspects of water and related land resource planning for the water resource regions.

-- Help coordinate regional land and water resource planning with comprehensive planning for the regions.

-- Provide soil and water planning assistance to regional planning bodies for developing functional plans.

State and Area

Planning assistance at state and area levels, such as multicounty or similar areas, can harmonize state and area plans for the use and management of land and water resources with national and regional goals, policies, and plans.

State and area planning provides the framework for action by state and local units of government for soil and water conservation projects and programs. Such planning should be geared to the problems, conditions, culture,and needs of an area and may vary from state to state. Resource conservation planning must recognize natural areas such as watershed, river basin, or land resource area. Information prepared for state and area planning will be useful in preparing state water or land use plans, comprehensive development plans, and environmental plans. This information should identify actions that can be taken at the local, state, and federal levels as well as those at the multicounty level.

GOAL: State and area plans that include prudent use and conservation of soil, water, and related resources.

THE SOIL CONSERVATION SERVICE WILL:

-- Assist state and area planning units develop and maintain comprehensive plans based on the prudent use and conservation of soil, water, and related resources.

-- Help state governments develop legislative and administrative guidelines and regulations for using, developing, and managing soil, water, and related resources.

-- Assist units of government in the study of river basins, subbasins, or groups of watersheds as a basis for preparing and implementing plans for the conservation and development of water and related land resources.

-- Encourage local leaders to participate in area planning.

-- Strengthen planning capability to assist state agencies and others in developing and maintaining state and area comprehensive plans and land and water resource plans.

Urban and Suburban

An urban-and-suburban planning unit has such general characteristics as high population density, rapid growth rate, and urban expansion. It usually has a professional planning staff and a set of ordinances for implementing plans. Generally, urban-and-suburban planning units are in Standard Metropolitan Statistical Areas (SMSA), and growth is self-generating.

GOAL: **Urban-and-suburban plans that include prudent use and conservation of soil, water, and related resources.**

THE SOIL CONSERVATION SERVICE WILL:

-- Recognize and use planning principles that support quality standards for prudent use and treatment of land awaiting development, land being developed, and land that requires maintenance after development.

-- As appropriate, locate SCS staff with urban-and-suburban planning staff to help them incorporate SCS soil, water, and related resource technology in their planning, operations, and regulations.

-- Identify hazards and limitations related to soil and water conservation that can be avoided or alleviated as development takes place.

-- Provide natural resource inventory information and, if special SCS inputs are required, develop cost-share arrangements.

Town and Country

A town-and-country planning unit usually coincides with the trade and service area. It is generally outside SMSA's, and, although it lacks most of the characteristics of an urban-and-suburban planning unit and has lower population density, it is likely to grow. Growth, however, often requires motivation. It may be a multicounty area represented by many local units of government. It can embrace all types of general and operational planning and the goals are compatible with rural planning.

Town-and-country planning seeks to improve the infrastructure of the area so as to optimize social, economic, and biologic environs for people in both town and country. Planning includes decisions leading to essential cultural and economic facilities and other services required for work, education, health, and enjoyment. Planning emphasizes prudent use of natural resources; input needs of rural producers and local industry as well as storage, marketing, financial, and transportation services; development of all sectors of agriculture essential to successful farming; production of basic and manufactured products that have the greatest multiplier effects on employment, wages, and income; and flexibility for future growth so that ample space is provided for expansion without environmental degradation.

Town-and-country planning is based on the premise that the problems of rural development, of resource management, and of land and water use require comprehensive approaches that include social, political, economic, and ecological concerns. It recognizes that the best efforts of all concerned are needed to insure that soil, water, and related resources are properly developed to serve best the space requirements and other needs of people.

GOAL: Town-and-country planning that achieves optimum benefits and that includes prudent use and conservation of soil, water, and related resources.

THE SOIL CONSERVATION SERVICE WILL:

-- Encourage decision makers to consider the needs of the entire community and to make plans compatible with future growth and quality standards.

-- Correlate resource planning with the policies, standards, and priorities of state and area plans.

-- Help conservation districts get community participation in planning resource conservation and use.

-- Help develop multiple-purpose watershed and other resource plans based on the needs of both town and country.

-- Help local governments set up organizations to adopt and administer land and water use ordinances that maintain quality standards.

-- Keep plans open-ended to meet changing needs.

-- Recognize essential factors affecting employment opportunities and quality of the environment in evaluating feasibility of watershed and other projects for planning assistance.

-- Help units of government with resource planning of new communities.

Group and Individual

The Soil Conservation Service, through conservation districts, assists all people who own or control renewable natural resources or plan their use to reach soil and water conservation objectives in accordance with quality standards. Planning assistance that achieves natural resource conservation and environmental quality will rate high priority.

GOAL: Adequate plans for conservation of soil, water, and related resources on all land.

THE SOIL CONSERVATION SERVICE WILL:

-- Help land owners and users attain quality standards that support their objectives and those of their community, state, and Nation.

-- Recognize mutually supporting objectives of the community and of groups and individuals.

-- Help decision makers understand basic planning principles, how they apply to their needs, and how they relate to community objectives, goals, and quality standards.

-- Help citizens understand ordinances, regulations, and quality standards that are pertinent to resource development and that are required by local government.

INSTALLATION AND MAINTENANCE ASSISTANCE

Resource management systems make the maximum contribution to effects, benefits, and objectives if the conservation measures in the system are functioning properly. Measures must be carefully planned, installed, and maintained. Maintenance is frequently the most neglected part of the three phases of work, yet it is equally critical to the long-term satisfactory operation of the system.

GOAL: Planned resource management systems installed, operated, and maintained according to quality standards.

Installation

Installation is defined as those activities that take place after the planning decisions are made. Installation includes design, layout, and construction of works of improvement and conservation measures. Installation of planned work must be timely and must conform to the plan if anticipated effects and benefits are to be realized.

To the extent necessary to insure quality control and to implement new techniques, SCS will provide onsite technical assistance for the application of measures. This includes assistance in applying conservation measures to improve resource management systems if it is not locally available or if land users are unable to assume this responsibility.

GOAL: Works of improvement and conservation measures installed according to standards.

THE SOIL CONSERVATION SERVICE WILL:

-- Improve present installation methods and develop new ones that save time and money.

-- Encourage state and local governments to share in installation services concerned with works of improvement.

-- Assist sponsors and cooperators in training competent people to make installations.

-- Simplify installation methods for easier use by others.

-- Make studies and experiments to find out the best and most efficient means of installing conservation measures.

-- Accelerate efforts by each discipline to simplify the explanation of technical procedures.

-- Encourage and help interested educational institutions set up courses and develop curricula for training conservation technicians.

-- Encourage units of state and local government, private enterprise, and land users to assume a greater responsibility for applying conservation measures.

-- Work with contractors in developing and training technical staffs to provide layout and quality-control services as part of their contract.

-- Assist units of government in training people to carry out erosion and sediment control ordinances.

Maintenance

Operation and maintenance is a responsibility of sponsors and land users but frequently SCS technical assistance is required. If they are made fully aware of operations and maintenance requirements at the time of original installation, need for later SCS assistance is minimized.

GOAL: **Works of improvement and conservation measures operated and maintained according to standards.**

THE SOIL CONSERVATION SERVICE WILL:

-- Improve criteria for determining adequate operation and maintenance organizations and assist those that do not meet quality standards in upgrading their capability.

-- Inform sponsors and land users of the nature and costs of operations and maintenance when they apply for assistance.

-- Assist sponsors in inspecting completed work.

-- Assist sponsors and land users in maintaining resource management systems according to quality standards.

INFORMATION SUPPORT

All persons need to be informed about resource conservation--some because they make resource decisions but all because they share in the American environment. Young people, especially, should be informed so that conservation becomes a way of life by the time they are in decision-making roles. Although information is the job of each SCS employee, it is the responsibility of public information specialists and educators to guide SCS information efforts.

The SCS information job is to inform all citizens about resource conditions and conservation needs. It is also SCS's responsibility to report to the public on expenditures, programs, accomplishments, and progress of soil and water conservation.

GOAL: All citizens informed about soil and water conservation so that they are concerned about, and participate in, resource decisions.

THE SOIL CONSERVATION SERVICE WILL:

-- Inform all citizens of available SCS technical services and financial assistance.

-- Accelerate conservation education efforts in working with technical and educational institutions and agencies to inform citizens and environmental leaders on all resource conservation issues.

-- Increase the use of such media as newspapers, radio, television, and publications to help all concerned Americans understand soil, water, and other resources and their conservation.

-- Increase the use of all media for getting information about soil and water conservation to public officials, especially members of planning and development groups and regulating bodies.

-- Expand assistance to schools, especially in developing outdoor conservation classrooms.

-- Publish more how-to-do-it publications.

-- Cooperate fully with industry in developing educational and information material on resource conservation.

MANAGEMENT SUPPORT

Management support includes program planning and the setting of goals and objectives; budgeting, accounting, and fiscal examining; personnel administration, including organization and staffing arrangements; contracting, procurement, and records management; development and operation of automated systems; workload analysis; work planning, scheduling, and inspections; and management improvement studies.

Each SCS employee is a manager of time, skill, and materials. Understanding his responsibilities is necessary if complex programs are to be effectively administered. Efficiency, energy, curiosity, enthusiasm, and innovation on the part of each employee is the foundation of the Soil Conservation Service. The SCS image is continually reflected by its professionalism and by the value systems of its employees and the people they assist.

Management needs to take into account the continual changes in value-system attitudes and behavior. Trends indicate that a reordering of values may have significant organizational impacts. Efforts will be made to insure that organizational values such as order, routine, output, authority, and administrative convenience are blended with individual values such as personal goals, individuality, relationships with others, and greater participation in decision making. In guiding changes to improve SCS effectiveness, management recognizes the need for a proper balance between human and organizational values.

SCS will help satisfy more than the basic needs of its employees. Their social need to belong and associate will be considered as well as their need for professionalism, knowledge, self-confidence, achievement, and recognition. Meeting these needs will help SCS achieve its objectives and fulfill its authorities.

The ethic of conservation, which has been a significant motivating factor in the past for SCS employees, remains today. Management recognizes that the conservation ethic helps motivate employees to improve soil, water, plant, and wildlife resources. Achievement in this endeavor can provide individual satisfaction and make management efforts productive and worthwhile. Proper management of SCS resources can provide meaning and purpose to every employee's job.

GOAL: A highly motivated, innovative, and effective organization that achieves program goals and objectives.

THE SOIL CONSERVATION SERVICE WILL:

-- Insure a good quality working environment that maintains active employee interest, enthusiasm, and productivity.

-- Develop a management system that includes supporting information responsive to program planning, budgeting, and management needs.

-- Establish staffing levels, disciplines, and workload standards that fully support goals and objectives for soil and water conservation.

-- Expand the SCS career development program to keep well-trained employees in all disciplines and to encourage an interchange of employees with related agencies.

-- Determine annual accomplishments required to meet long-range goals and objectives.

-- Study workloads to determine staffing needs and make any needed adjustments.

-- Evaluate periodically the organization and activities of SCS Washington, regional, and state offices and determine need for additional delegation of authority.

-- Study ADP uses, hardware, computer locations, telecommunications, and program requirements and adopt a plan for automation that most effectively serves technical and management needs.

-- Restructure the records and reporting system to provide data useful in determining the contribution of program activities to mission goals and objectives; also to develop models to relate program accomplishments to social and economic benefits.

INTERNATIONAL ASSISTANCE

The Soil Conservation Service has gained worldwide recognition for its soil and water surveys, resource development, and conservation practices. This has come about through distribution of published technical material, participation by SCS specialists in international meetings, and personal contacts here and abroad. Recognition in such areas as soil surveys, arid land management, range and pasture management, irrigation and drainage, and watershed management has resulted in the adoption of SCS technology and techniques to soil, water, and plant management throughout the world. Exchange of information with foreign scientists has benefited SCS too. International assistance is an integral part of the SCS career program.

GOAL: International assistance that achieves optimum exchange of technical expertise between the Soil Conservation Service and foreign countries and that develops soil and water conservation programs in foreign countries.

THE SOIL CONSERVATION SERVICE WILL:

-- Provide assistance to foreign nations when it is United States policy to provide such assistance, if the U. S. Department of Agriculture has a working agreement with the Agency for International Development or other international organizations to supply technical expertise, and if SCS can release qualified specialists.

-- Provide training to foreign nationals in soil and water conservation.

-- Encourage SCS specialists to participate in international conferences to carry on correspondence and exchange publications with foreign specialists.

-- Give special training to foreign scientists and administrators and to employees of U. S. organizations in developing soil and water conservation programs in foreign countries.

-- Provide special training for foreign assignment to SCS employees.

CHAPTER VII. INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTING THE PLAN

Implementing the long-range plan can be done best in an atmosphere of understanding, cooperation, and common interests between the Soil Conservation Service and institutions at all levels. Institutional arrangements are of paramount importance.

The primary role of the Soil Conservation Service is providing technical assistance. Federal, state, local,and private institutions work with SCS in formulating and carrying out their policies for resource development and conservation. This working together is the only way soil and water conservation and natural resource development can be done well enough and soon enough to insure the continued well-being of our Nation. By working together, soil and water conservation districts and the Soil Conservation Service can be more effective in working with others to accomplish common objectives and goals.

The concern about man's environment should stimulate every citizen to participate in soil and water conservation activities. Citizens must be informed about the current state of and the future trends in environmental quality and how they affect their welfare. It is essential that all citizens get a better understanding of community objectives as they relate to natural resources, environmental quality, and a desirable standard of living. With this understanding, people in a community can proceed with plans to attain these objectives.

INSTITUTIONAL FACTORS

How people and institutions work together is shaped by the Nation's institutional arrangements for owning, using, and managing natural resources. The basis for these arrangements is in constitutional law, statute law, and common law. Institutional factors that affect the management of natural resources include:

- Private ownership of resources or private rights to use resources.
- A federal form of government in which most of the authority over property is vested in state and local governments.
- Public ownership of unique, fragile, or scarce resources.
- A competitive economy in which the marketplace guides economic production, allocates resources, and distributes income.

- A complex system of federal, state, and local laws, regulations, and public programs that are designed to correct or improve the performance of the marketplace.

- A broad system of public education from elementary school through college.

- Private and semipublic conservation organizations and associations designed to generate voluntary cooperative action by resource users to advance both private and public interest.

- Citizen participation through public advisory groups.

Some institutional factors become more important under pressures of change. These pressures influence the rate of change in institutions. Projected population growth in the United States and the expectations of society will intensify competition for many resources. This places new and possibly unforeseen demands on SCS to assist in attaining a quality of life that satisfies most Americans.

Several factors may adversely affect soil and water resource management and influence the institutional arrangements for carrying out soil and water conservation programs. Among these are:

- Lack of knowledge or unwillingness of resource users to recognize the importance of conservation.

- Uncertainty about future prices.

- Lack of financial resources to make needed conservation investments.

- Public policy and management programs that are not compatible with prudent land use and conservation.

It is well recognized that land users with secure long-term land use rights are generally more likely to make investments in conservation work. Both the land user and the public gain economic and environmental benefits for such efforts. Such factors as tenancy arrangements, credit, commodity pricing, taxing policies, and crop insurance should be considered. Institutional arrangements, policies, and programs need to be modified so that there is enough certainty about resource use to provide incentives to land users for prudent and sustained resource management.

Individual, group, and societal interests in resource use and management do not always coincide. The long-term consequences of many short-term decisions are not always desirable. Often the maximum profit to resource users may not result in the maximum benefit to society. This happens if a resource user is not charged by society for a cost that he has generated or if he is not reimbursed by society for a value he has produced. The control of sediment is an example. The home builder is not paid by society for the cleaner water resulting from his erosion-control measures. On the other hand, if the builder fails to install proper erosion-control measures and sediment from his construction site forces people downstream to pay for dredging lakes or reservoirs, he is not charged by society. If individual, group, and societal interests conflict, new laws, ordinances, or regulations may be needed.

The Soil Conservation Service will give priority to institutional arrangements and programs that:

-- Encourage widespread participation of citizens in soil and water conservation activities and decisions.

-- Overcome institutional factors that adversely affect soil and water conservation.

-- Lead to arrangements and incentives that give land users more security.

-- Support democratic arrangements that contribute to mission objectives for soil and water conservation.

-- Encourage federal, state, and local authorities to develop arrangements that make equitable distribution of costs for soil and water conservation.

INSTITUTIONAL RELATIONSHIPS

Federal

An increasing number of federal institutions are concerned with soil and water conservation issues, particularly as they relate to economic factors and environmental quality. This leads to issues of jurisdiction and coordination. There is a continuing need to further clarify federal policy and program criteria pertaining to resource use and management. This emphasis and clarification is especially needed in the areas of land use, forestry, recreation, waste management, surface mining, snow surveys and water supply forecasting, fish and wildlife habitat, control of streambank and shore erosion, and estuary management.

THE SOIL CONSERVATION SERVICE WILL:

-- Work with federal institutions in clarifying policy and program criteria and in coordinating regional resource programs.

State

New emphasis is being given to state, regional, and local water and land use policies. Coordination of these policies by both federal and state institutions is of priority concern. State laws are being written and state institutions created to deal with conservation issues and to furnish guidance to local institutions.

THE SOIL CONSERVATION SERVICE WILL:

-- Cooperate with state institutions in developing and implementing land use and water policies and in furthering conservation education.

-- Help state institutions develop legislation and formulate and carry out planning and implementing guidelines for using and managing soil and water resources.

Local

Conservation districts are the primary local institutions with which SCS works. The soil and water conservation program is a singularly good example of effective federal-state-local cooperation. Conservation districts are legally organized subdivisions of state government. They represent all people within the district in matters of soil and water conservation and resource development. Districts are demonstrating their ability to bring together diverse resource interests and develop and implement plans. Conservation districts and the Soil Conservation Service recognize that society is more concerned than ever about the consequences of current conservation decisions. Both recognize the need to emphasize broader citizen involvement.

In addition to conservation districts, many units of local government have special capabilities and responsibilities for working on selected soil and water issues. Some of these are: Municipalities, educational institutions, land use planning and regulatory organizations, economic development units, park and recreation departments, water development boards and commissions, pollution abatement organizations, and road and highway departments.

THE SOIL CONSERVATION SERVICE WILL:

-- Cooperate with conservation districts and other local institutions generally through a three-way memorandum of understanding.

-- Assist conservation districts in assuming greater responsibilities for representing people in the district in a broadened soil and water conservation program.

Private

A large and growing number of private organizations can influence public actions on important soil and water conservation issues. Encouragement and assistance should be given to these organizations. They can provide leadership in public discussion of issues and can help crystallize public opinion on possible courses of action.

THE SOIL CONSERVATION SERVICE WILL:

-- Cooperate with private organizations by providing them with objective and factual information for relating their conservation activities to the needs of people for a better environment, community improvement, and economic opportunity.

The Framework Plan

Soil and Water Conservation for a Better America indicates the direction for future Soil Conservation Service efforts in a role of new emphasis and growing responsibilities. Implementation will require redirected and expanded efforts. The plan is designed as a springboard for developing a series of flexible short-range plans to close the gap between the present and the future. Generally, these will be oriented to a 5-year period. Such plans will include short-range programming, financial planning, and management. Short-range programming will be used to quantify goals and objectives and to analyze and evaluate alternative approaches to achieving them.

As a part of implementing the long-range plan, SCS will have an advisory group. It will be used to observe, evaluate, and make recommendations for actions that balance the need for change with the need for continuity. This group will include SCS employees from both Washington and the field and may, from time to time, use outside consultants. One of its important functions will be to conduct a continuing inventory and analysis of both state and federal legislative decisions that affect soil and water conservation.

As conditions and needs affecting specific parts of its objectives change, SCS will modify its direction and efforts in the shortest possible time. This way the plan can be kept current so that it can be used effectively in charting a direction for soil and water conservation that makes the best contribution toward a better America.

Implementing the long-range plan, adapting it to local situations, changing it as needed, and using it as a guide to vigorous action is the responsibility of every employee of the Soil Conservation Service.

EXHIBITS

The Framework

In Action

For Soil and Water Conservation

The Hierarchy of Goals

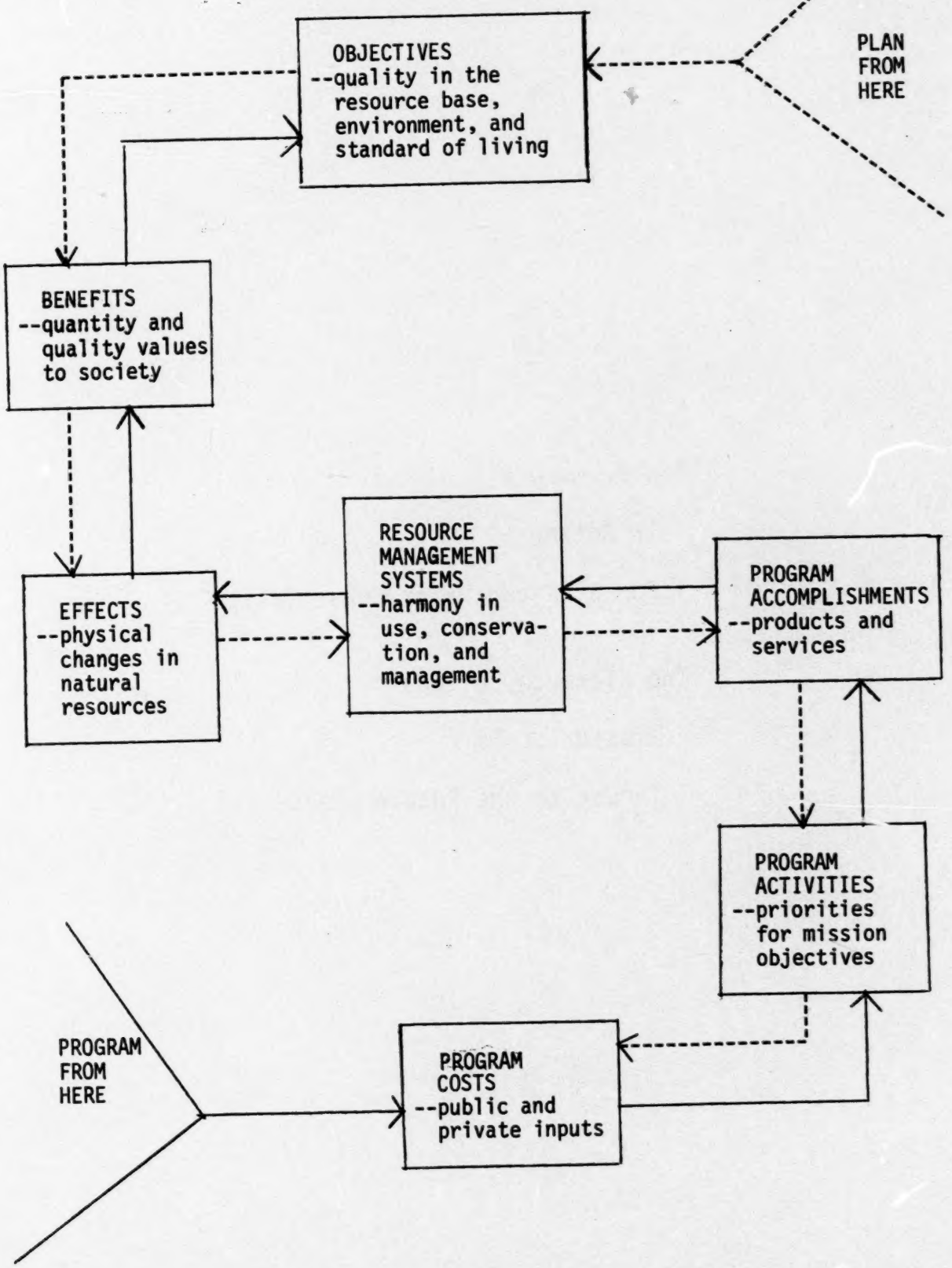
Mission Goals

Thrust to the Future Goals

-- FRAMEWORK IN ACTION --

a model for

planning and programming



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THE FRAMEWORK FOR SOIL AND WATER CONSERVATION outlines the key elements of the framework plan. The FRAMEWORK IN ACTION model shows the flows for planning and programming.

In PLANNING, the flow begins with the objectives. The attainment of objectives is dependent on the attainment of benefits. Benefits represent the values of the conservation effort to society as natural resources are used and managed according to quality standards. They are realized by planning for effects, which are the physical results of changes and improvements in resource management systems. Resource management systems are the pivotal items in planning. Goals and future needs planned for resource management systems bring about effects and benefits and determine the program accomplishments, program activities, and program costs that will be required.

In PROGRAMMING, the flow is reversed. Objectives are known. Emphasis is on program costs, activities, and accomplishments to bring about needed changes in use and improvements in resource management systems. These systems are the pivotal items in programming as well as in planning. Effects and benefits determine where priorities for changes in use and for improved resource management systems should take place. Program costs determine the kinds and amounts of program activities. Activities lead to program accomplishments. Program accomplishments are evaluated primarily in terms of their contribution to mission objectives and goals. Accomplishments culminate in changes in use and the installation, operation, and maintenance of improved resource management systems, which lead to effects, benefits, and objectives.

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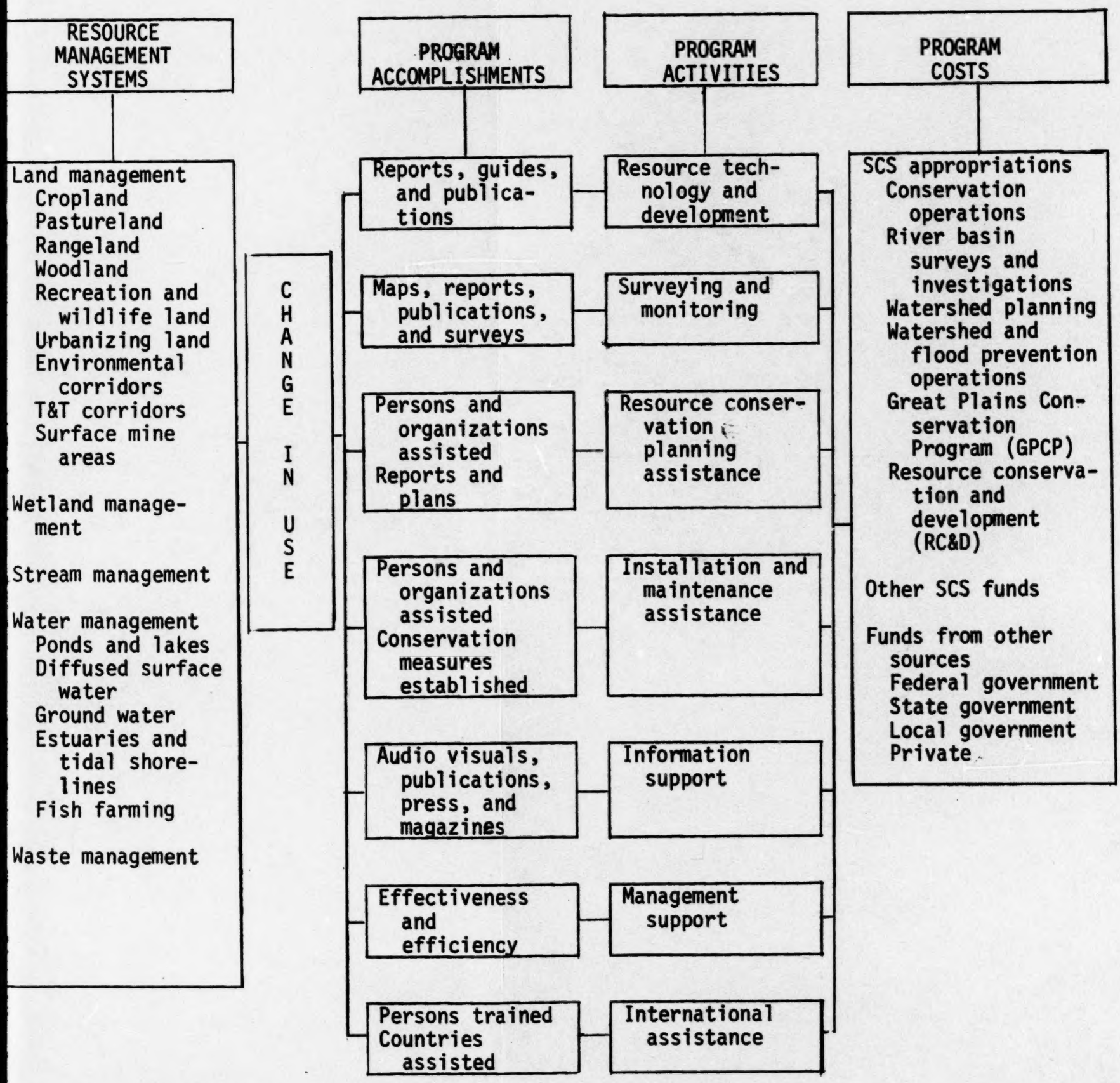
FRAMEWORK FOR SOIL AND WATER

OBJECTIVES	BENEFITS	EFFECTS	RESOURCE MANAGEMENT SYSTEMS	CHANGE IN USE
Quality in the natural resource base for sustained use. Quality in the environment to provide attractive convenient, and satisfying places to live, work, and play. Quality in the standard of living based on community improvement and adequate income.	Cropland quality Pastureland quality Rangeland quality Woodland quality Water quality Water supply Recreation opportunities Fish and wildlife habitat quality Natural beauty Air quality Urban-suburban and Town-and-country environmental quality Economic efficiency Job opportunities Service facilities	Erosion control and sediment reduction Pollution prevention and abatement Water storage Water conservation Ground-water recharge Drainage improvement Fish and wildlife habitat improvement Plant cover improvement Flood reduction Stream baseflow improvement Compatible resource use patterns	Land management Cropland Pastureland Rangeland Woodland Recreation and wildlife land Urbanizing land Environmental corridors T&T corridors Surface mine areas Wetland management Stream management Water management Ponds and lakes Diffused surface water Ground water Estuaries and tidal shorelines Fish farming Waste management	

O I L A N D W A T E R C O N S E R V A T I O N



MISSION GOALS FOR SOIL

OBJECTIVES	BENEFITS	EFFECTS	Changes in ment needs and mutual
	Adequate amounts of land, water, and related resources arranged, used, and maintained according to quality standards for sustained use.	Desired physical changes resulting from managing soil, water, and related resources according to quality standards.	
<u>Quality</u> in the natural resource base for sustained use.	Cropland-- Adequate amounts of quality cropland.	Erosion Control and Sediment Reduction-- Soil erosion and sediment delivery reduced to an acceptable level.	*Participat refining n cies and s
	Pastureland-- Adequate amounts of quality pastureland.	Pollution Prevention and Abatement (other than sediment)-- Soil, water, and air pollution reduced to an acceptable level.	*Developmen to impleme to quality
	Rangeland-- Adequate amounts of quality rangeland.	Water Storage-- Adequate water-storage capacity for flood prevention and streamflow regulation and to meet the needs for water supply, for fish and wildlife, and for recreation.	*National a establish
	Woodland-- Adequate amounts of quality woodland.	Water Conservation-- An adequate supply of good quality water; maximum efficiency in water use.	·Soil and resource flooding
	Water-- Adequate amounts of clean water to meet multiple-use needs.	Ground-Water Recharge-- An ample supply of good quality ground water.	·Use capa produce crowding
<u>Quality</u> in the environment to provide attractive, convenient, and satisfying places to live, work, and play.	Recreation Opportunities-- Adequate outdoor recreation opportunities within easy reach of all people.	Drainage Improvement-- Drainage improved on land if it is in the public interest; preservation of wetlands that have value for wildlife.	·Sanitati tion aba
	Fish and Wildlife Habitat-- Adequate amounts of quality fish and wildlife habitat with special regard for rare and endangered species.	Fish and Wildlife Habitat Improvement-- Improved and protected fish and wildlife habitat.	·Security from flo
	Natural Beauty-- Pleasing urban and rural landscapes.	Plant Cover Improvement-- Adequate amounts and varieties of suitable plant materials to meet needs for protecting the soil.	·Preserva esthetic
<u>Quality</u> in the standard of living based on community improvement and adequate income.	Air Quality-- Air free of dust, unpleasant odors, smoke, and other pollutants.	Flood Reduction-- Minimum flood damage in upstream watersheds.	·Control patterns
	Urban-Suburban and Town-and-Country Environmental Quality-- Society's needs for goods and services are met.	Stream Baseflow Improvement-- Stream baseflow improved for multiple-use needs.	·Preserva for farm other sp
	Economic Efficiency-- Resources used efficiently through prudent selection of investment and production alternatives including selection of suitable land, effective use of water, and application of conservation technology.	Compatible Patterns of Resource Use-- Compatible patterns of resource use that support natural resource and environmental objectives.	*Set forth
	Job Opportunities-- Jobs in town and country at equitable pay rates.		
	Service Facilities-- Adequate public and private facilities including transportation, utilities, schools, libraries, and hospitals.		

MISSION GOALS FOR SOIL AND WATER CONSERVATION

EFFECTS

Desired physical changes resulting from managing soil, water, and related resources according to quality standards.

Erosion Control and Sediment Reduction--
Soil erosion and sediment delivery reduced to an acceptable level.

Pollution Prevention and Abatement (other than sediment)--
Soil, water, and air pollution reduced to an acceptable level.

Water Storage--
Adequate water-storage capacity for flood prevention and streamflow regulation and to meet the needs for water supply, for fish and wildlife, and for recreation.

Water Conservation--
An adequate supply of good quality water; maximum efficiency in water use.

Ground-Water Recharge--
An ample supply of good quality ground water.

Drainage Improvement--
Drainage improved on land if it is in the public interest; preservation of wetlands that have value for wildlife.

Fish and Wildlife Habitat Improvement--
Improved and protected fish and wildlife habitat.

Plant Cover Improvement--
Adequate amounts and varieties of suitable plant materials to meet needs for protecting the soil.

Flood Reduction--
Minimum flood damage in upstream watersheds.

Stream Baseflow Improvement--
Stream baseflow improved for multiple-use needs.

Compatible Patterns of Resource Use--
Compatible patterns of resource use that support natural resource and environmental objectives.

CHANGE IN USE

Changes in land and water use to meet development needs and correct misuse so that compatible and mutually supporting patterns of use result.

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*Participation of public and private concerns in refining national and state resource use policies and standards.

*Development of planning criteria and ordinances to implement sound land and water use according to quality standards.

*National and state land and water policies that establish broad standards for resource use:

- Soil and water conservation that will protect resources from excessive erosion, siltation, flooding, pollution, and similar damage.
- Use capacity of different resource areas to produce desired goods and services without crowding or environmental degradation.
- Sanitation, including waste disposal, pollution abatement, and control of disease.
- Security and safety, providing protection from floods, fires, and earthslides.
- Preservation of recreation, fish and wildlife, esthetic, and scenic values.
- Control of noise through compatible land use patterns and vegetative barriers.
- Preservation of sites that have unique values for farming, recreation, natural beauty, and other special uses such as historic sites.

*Set forth as FUTURE NEEDS in text.

Resource management s
patible and mutually
and living standard o

LAND MANAGEMENT SYSTEMS--
A harmony of land uses maintaine
standards to serve adequately th
all.

Cropland--
Cropland managed at quality st
meet requirements for food and
soil and water conservation, a
multiple-use needs.

Pastureland--
Pastureland managed according
standards for sustained use to
adequate supply of good forage
the needs for watershed protec
life management.

Rangeland--
Rangeland managed according to
standards to meet needs for li
duction, watershed protection,
management.

Woodland--
Woodland managed according to
ards to meet requirements for
land products, for watershed p
for recreation.

Recreation and Wildlife Land--
Recreation and wildlife land m
ing to quality standards to me
needs.

Urbanizing Land--
Urban and urbanizing land deve
to quality standards to provid
environment in which to live,

Environmental Corridors--
Identification, development, a
of environmental corridors acc
quality standards to serve the
people for open space.

Transportation & Transmission Co
T & T corridors located and ma
ing to quality standards to pr
safety and natural beauty and
multiple uses.

Surface Mine Areas--
Surface mine areas stabilized
quality standards to control e
prevent pollution; managed so
return to other productive use

WATER CONSERVATION

ANGE IN USE

water use to meet develop-
ect misuse so that compatible
ting patterns of use result.

blic and private concerns in
nd state resource use poli-

nning criteria and ordinances
land and water use according
ds.

land and water policies that
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onservation that will protect
xcessive erosion, siltation,
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different resource areas to
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and control of disease.

ety, providing protection
es, and earthslides.

recreation, fish and wildlife,
enic values.

through compatible land use
etative barriers.

sites that have unique values
reation, natural beauty, and
es such as historic sites.

URE NEEDS in text.

RESOURCE MANAGEMENT SYSTEMS

Resource management systems that meet quality standards and that are compatible and mutually supporting in meeting natural resource, environmental, and living standard objectives.

LAND MANAGEMENT SYSTEMS--
A harmony of land uses maintained at quality standards to serve adequately the needs of all.

Cropland--
Cropland managed at quality standards to meet requirements for food and fiber, for soil and water conservation, and for other multiple-use needs.

Pastureland--
Pastureland managed according to quality standards for sustained use to provide an adequate supply of good forage and to meet the needs for watershed protection and wildlife management.

Rangeland--
Rangeland managed according to quality standards to meet needs for livestock production, watershed protection, and wildlife management.

Woodland--
Woodland managed according to quality standards to meet requirements for producing woodland products, for watershed protection, and for recreation.

Recreation and Wildlife Land--
Recreation and wildlife land managed according to quality standards to meet national needs.

Urbanizing Land--
Urban and urbanizing land developed according to quality standards to provide a satisfying environment in which to live, work, and play.

Environmental Corridors--
Identification, development, and management of environmental corridors according to quality standards to serve the needs of people for open space.

Transportation & Transmission Corridors--
T & T corridors located and managed according to quality standards to provide maximum safety and natural beauty and for compatible multiple uses.

Surface Mine Areas--
Surface mine areas stabilized according to quality standards to control erosion and prevent pollution; managed so that they can return to other productive uses.

WETLAND MANAGEMENT SYSTEMS--
Wetland managed according to quality standards to meet esthetic, environmental, and recreation needs.

STREAM MANAGEMENT SYSTEMS--
Stream systems managed according to quality standards for such multiple uses as water supply, recreation, esthetic needs, and fish and wildlife habitat.

WATER MANAGEMENT SYSTEMS--
Management of water resources according to quality standards to provide adequate water for individual, municipal, commercial, industrial, and agricultural uses; for recreation; and to serve esthetic and environmental needs.

Ponds and Lakes--
Ponds and lakes developed and managed according to quality standards to provide adequate water for consumption, recreation, and fish and wildlife.

Diffused Surface Water--
Diffused surface water managed according to quality standards for such uses as agriculture, recreation, and wildlife.

Ground Water--
Ground water managed according to quality standards for sustained use.

Estuaries and Tidal Shorelines--
Estuaries and tidal shorelines managed according to quality standards to minimize shoreline erosion and offshore siltation, for fish and wildlife habitat, for recreation, and for beauty.

Fish Farming--
Development and management of fish farming enterprises according to quality standards for commercial production of fish and other aquatic species.

WASTE MANAGEMENT SYSTEMS--
Waste management systems located and managed to meet quality standards.

THRUST TO THE FUTUR

Program activities that help people improve and maintain resource
for sustained use and support natural resource, environmen

RESOURCE TECHNOLOGY DEVELOPMENT

Broadened resource technology that meets challenges posed by the intensified use of soil, water, and related resources and by the impact of technology on environmental quality.

SURVEYING AND MONITORING

Surveying and monitoring activities that provide resource information needed for carrying out research, for establishing resource use policies, for planning resource management systems, and for informing the public.

Surveying--Soil Surveys
A soil survey of the Nation that is complete and current.

Surveying--Natural Resources
Basic resource data and interpretations for units of government, planners, and others concerned with resource management.

Monitoring--Natural Resources
A system for monitoring the condition of the Nation's natural resources.

Monitoring--Sediment
A sediment monitoring system that includes information such as sediment sources, deposition, characteristics, and effects.

Monitoring--Snow and Water Supply
Timely and accurate snow-survey data for wat · resource control and management, for flood-war ing purposes, and for better understanding of the generation of floodflows from snowmelt.

RESOURCE CONSERVATION PLANNING ASSISTANCE

Planning assistance to decision makers that they can foresee, identify, and e water problems and can pursue action p come the problems and promote orderly living through resource management.

National and Regional
National and regional plans that inc and conservation of soil, water, and

State and Area
State and area plans that include pr servation of soil, water, and relate

Urban and Suburban
Urban-and-suburban plans that inclu conservation of soil, water, and rel

Town and Country
Town-and-country planning that achie efits and that includes prudent use soil, water, and related resources.

Group and Individual
Adequate plans for conservation of lated resources on all land.

T H E F U T U R E G O A L S

nd maintain resource management systems to meet quality standards
resource, environmental, and living standard objectives.

ESOURCE CONSERVATION
PLANNING ASSISTANCE

e to decision makers and citizens so
see, identify, and evaluate soil and
can pursue action programs that over-
and promote orderly growth and quality
ource management.

nal
ional plans that include prudent use
of soil, water, and related resources.

lans that include prudent use and con-
l, water, and related resources.

an plans that include prudent use and
soil, water, and related resources.

planning that achieves optimum ben-
ncludes prudent use and conservation of
related resources.

al
or conservation of soil, water, and re-
on all land.

INSTALLATION AND MAINTENANCE ASSISTANCE

Planned resource management systems installed, operated, and maintained according to quality standards.

Installation
Works of improvement and conservation measures installed according to standards.

Maintenance
Works of improvement and conservation measures operated and maintained according to standards.

INFORMATION SUPPORT

All citizens informed about soil and water conservation so that they are concerned about, and participate in, resource decisions.

MANAGEMENT SUPPORT

A highly motivated, innovative, and effective organization that achieves program goals and objectives.

INTERNATIONAL ASSISTANCE

International assistance that achieves optimum exchange of technical expertise between the Soil Conservation Service and foreign countries and that develops soil and water conservation programs in foreign countries.